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Software Development Tools

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NBS Special Publication 500-88

Software Development Tools

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National Bureau of Standards
Washington, DC 20234

U.S. DEPARTMENT OF COMMERCE
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TABLE OF CONTENTS

Page

1. Introduction..... 1
2. A Profile of Software Tools..... 3
   - 2.1 General Classes of Software Tools..... 3
   - 2.2 Taxonomic View of Software Tools..... 5
   - 2.3 Environments of Software Tools..... 16
   - 2.4 Availability of Software Tools..... 19
   - 2.5 Literature and Sources on Software Tools..... 20
3. Conclusions..... 24
4. References..... 25

Appendices

Appendix A. Tools by General Classification

Appendix B. Tools by Input Subject

Appendix C. Tools by Transformation Features

Appendix D. Tools by Static Analysis Features

Appendix E. Tools by Dynamic Analysis Features

Appendix F. Tools by User Output

Appendix G. Tools by Machine Output

Appendices (continued)

Appendix H. Tools by Portability

Appendix I. Tools by Source Language

Appendix J. Tools by Hardware

Appendix K. Tools by Software

Appendix L. Tools in the Public Domain

Appendix M. Tools by Information Source

Appendix N. Tool Abstracts

Software Development Tools

Raymond C. Houghton, Jr.

Abstract

As a part of the program to provide information to Federal agencies on the availability, capabilities, limitations, and applications of software development tools, a database of information about existing tools was collected over a 3-year period. The purpose of this report is to present an analysis of the information contained in the database. Various categorizations of the tools are presented in classes listed by their characteristic features. The lists incorporate percentage summaries that are based on the total number of tools for which information is stored in the database. Trends found in the lists are analyzed and discussed. Abstracts of each tool are presented in an appendix.

Key words: programming aids; software automation; software development; software engineering; software testing; software tools.

1. Introduction

The Institute for Computer Sciences and Technology (ICST) within the National Bureau of Standards (NBS) has a mission under Public Law 89-306 (Brooks Act) to develop standards to enable the "economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal departments and agencies." As part of its current program, ICST is studying and evaluating methods that increase the productivity and quality of software procured by the Government and software developed within the Government. A partial solution to achieving higher quality software and increasing programmer productivity appears to lie in the use of the computer technology itself. Automation must be used to serve and augment itself. A recent

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NOTE: Certain commercial products are identified in this report in order to adequately present the subject area. In no case does identification of commercial products imply recommendation or endorsement by the National Bureau of Standards, nor does it imply that the product identified is necessarily the best or the only one available for the purpose.

GAO report [GAO80] endorses this use of automation and concludes that software tools can offer the Federal Government the following:

-- Better management control of computer software development, operation, maintenance, and conversion.

-- Lower costs for computer software development, operation, maintenance, and conversion.

-- Feasible means of inspecting both contractor-developed and in-house-developed computer software for such quality indications as conformance to standards and thoroughness of testing.

To this end, ICST initiated a project to study, evaluate, and make recommendations concerning the use of software development tools. A taxonomy of software tool features was published [Houg81] to provide a means for classifying and evaluating the capabilities of the ever more complex tools available in the marketplace. A survey of the use of software tools [Hech81] by representative software development groups in Government agencies, Government-supported research agencies, and commercial organizations was performed. NBS co-sponsored the tool fair [Houg81a] that was held in conjunction with the Fifth International Conference on Software Engineering.

As a part of the program to provide information to Federal agencies on the availability, capabilities, limitations, and applications of software development tools, a database containing information about existing tools [1] was collected over a 3-year period. Last year, a report [Houg80] was published to review the contents of the database. Since that report, the following work has been completed: (1) information on over 100 tools was added

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[1] The database contains information about 362 software development tools. There are, however, many more tools than this (for example, see [Schi81], [RCI81], or [SRA81]). A deliberate effort was made to keep the scope of the database within reason, but at the same time include a representative set of tools. Examples of tools that were excluded from the database include: (1) traditional software tools that are normally provided by computer vendors, such as compilers, editors, and operating system utilities; (2) assembly and machine language tools; and (3) tools that are not necessarily oriented to the software development process, such as management information systems and database management systems. However, when a completed submission was received directly from the developer of a tool, the information was almost always included in the database. Further discussion of the sources for tool information is presented in section 2.5.

to the database, (2) all the tools were classified according to the taxonomy of tool features, (3) many retrieval programs were developed, and (4) much of the information was updated.

The purpose of this report is to analyze and to present the current information on software development tools that is contained in the database. Various categorizations of the tools are presented in classes listed by their characteristic features. The lists incorporate percentage summaries that are based on the total number of tools for which information is stored in the database. These lists provide an overview of the database information as well as a means to determine tools of interest for a given category. The appendices provide additional information about specific tools.

2. A Profile of Software Tools

There are many ways in which one can view the characteristics of software tools [Houg81b]. The approach that is taken in this section is to choose several different vantage points. Each of the various points, of course, is based on the inherent structure of the database.

The first vantage point is a coarse functional view of tools. A very simple classification system that consists of only six categories is used. This view is followed by a much more detailed perspective in Section 2.2 that is based on the taxonomy of tool features. In this section, each feature is described and defined. Percentage summaries of tools that are characterized by these features are presented. The third view in Section 2.3 involves the hardware and software characteristics of tools. The fourth and fifth views, Sections 2.4 and 2.5, involve other important considerations about software tools, such as their availability, their sources, and their documentation.

2.1 General Classes of Software Tools

Software development tools have grown in complexity in recent years as have other software applications. Most early tools performed a single function and were very simple to describe. Tutorial papers of this era [Rama75] [Reif75] classified tools usually according to the function that they performed. These early, simpler tools have since given way to more complex tools which have increased functionality. The evolution of tool development is causing major shifts in the types of tools being developed and marketed. For example, formerly one heard a lot about compilers, debuggers, dump analyzers, flowcharters, and editors. Now one hears a lot about

software development systems, application generators, software engineering facilities, program generators, and programming environments. The capabilities of these current tools are much more sophisticated than their earlier counterparts.

Consequently, the tools in the database are not extensively classified according to traditional schemes because of their limitation in describing current technology. The number of categories in the traditional classification scheme was reduced to the following six:

Software Management, Control, and Maintenance Tools (MAC)
Software Modeling and Simulation Tools (SAM)
Requirements/Design Specification and Analysis Tools (RAD)
Program Construction and Generation Tools (GEN)
Source Program Analysis and Testing Tools (TAA)
Software Support System/Programming Environment Tools (ENV)

Since the above classes are not mutually exclusive, this categorization provides only a broad overview of the types of tools currently available.

The list that follows shows the number and percentage of tools [1] in the database that fall into these classes.

TAA.....	126	(34%)
MAC.....	120	(33%)
RAD.....	54	(14%)
GEN.....	37	(10%)
SAM.....	13	(3%)
ENV.....	12	(3%)

Appendix A lists the names of the tools in each class. The two most popular classes are MAC and TAA which, when combined, comprise almost three-quarters of all the tools in the database. The tools in these classes are primarily oriented to the analysis or management of programs written in a specific language. Two of the lesser populated classes, ENV and GEN, contain many tools

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[1] In all cases, except where noted, percentage values are based on the total number of tools in the database. The summation of percentages for a given profile is not, in most cases, equal to 100 percent for one of the following reasons: (1) truncation of the fraction, (2) a tool having no information for the profile subject, or (3) a tool being counted more than once within the profile subject. For example, a tool is likely to have more than one static analysis feature.

that have been more recently developed and, in some cases, are still under development. Tools in these classes are popular research areas.

2.2 Taxonomic View of Software Tools

To provide a more useful way of identifying tools of interest, each of the tools in the database is classified according to the taxonomy of tool features. The taxonomy is a hierarchical arrangement of software tool features and is illustrated in Figure 1. The highest level (@) is the most abstract and covers all the features below it. The second level of the taxonomy covers the basic processes of a tool. These are input (in), function (fn), and output (out). At the third level are the classes of tool features. These are subject (I), control input (C), transformation (T), static analysis (S), dynamic analysis (D), user output (U), and machine output (M). At the bottom or feature level of the hierarchy are a total of 53 tool features. The ranges between brackets signify the number of features in each of the classes.

```
                    {@}
                   / | \
            {in} {fn} {out}
           /  /  /  | \  \  \
        [I] [C] [T] [S] [D] [U] [M]
       /    /    /    |    \    \    \
[1-4] [1-2] [1-7] [1-19] [1-10] [1-5] [1-6]
```

Figure 1. Taxonomy of Tool Features

In classifying tools for the database, some liberties were taken to extend the taxonomy when more detailed information was available or when a new feature was discovered. Also, on occasion, some features were further specified to avoid confusion with other features of the same name. For example, "data" which is input was changed to "data input" to avoid confusion with "data" that is output. This experience will influence future revisions of the taxonomy.

In the paragraphs that follow, the taxonomy is used to organize the detailed analysis of the types of tools and tool features that are found in the database. For completeness, definitions of most of the terms in the taxonomy are also given.

INPUT

Tool input features are based on the forms of input which can be provided to a tool. These features fall into two classes, one which is based on how the tool should operate (control input) and the other based on what the tool should operate on (subject). The difference between these classes is clarified further in the paragraphs that follow.

Subject. The subject is usually the main input to a tool. It is the input which is subjected to the main functions performed by a tool. The four types of tool subjects are code, VHLL (very high level language), data, and text. Although the difference between these types is somewhat arbitrary, the taxonomy has very specific definitions for each.

The list that follows shows the number and percentage of tools that fall in these classes.

CODE INPUT	246	(67%)
VHLL INPUT	76	(20%)
DATA INPUT	69	(19%)
TEXT INPUT	19	(5%)

Appendix B lists the tools with each of these features and with the extensions defined below for code and VHLL input. Data and text input were not extended further.

Code Input - accepts a program written in a high level, assembly, or object level language. Code is the language form in which most programming solutions are expressed. The tools in this class are, in most cases, further classified according to the specific language that they accept. The list that follows shows the number and percentage of tools classified by language that is accepted as input.

FORTRAN	110	(30%)
COBOL	41	(11%)
JOVIAL	15	(4%)
STRUCTURED FORTRAN	10	(2%)
ASSEMBLY LANGUAGE	8	(2%)
BASIC	5	(1%)
CICS	4	(1%)
OBJECT CODE INPUT	4	(1%)
PL/1	3	(0%)
IFTRAN	3	(0%)
STRUCTURED COBOL	3	(0%)
ADA	3	(0%)
SRTRAN	3	(0%)
PASCAL	2	(0%)
COMPASS	2	(0%)
RATFOR	2	(0%)

LISP	2	(0%)
C	2	(0%)
DMATRAN	2	(0%)
MEMORY DUMP	2	(0%)
BAL	1	(0%)
SMAL/80	1	(0%)
PCL	1	(0%)
APL	1	(0%)
HAL/S	1	(0%)
CHILL	1	(0%)
ALGOL	1	(0%)
SNOBOL	1	(0%)
JCVS	1	(0%)
CSL	1	(0%)
MODULA	1	(0%)
MEFIA	1	(0%)
SCOBOL	1	(0%)
CMS-2	1	(0%)

Almost half of the tools with the code input feature accept FORTRAN and they comprise about one-third of all the tools in the database. However, it is still interesting to note the range of languages accepted by code input tools. The range includes LISP, SNOBOL, BASIC, CHILL, PL/1, ALGOL, APL ADA, MODULA, and even memory dumps (although one could argue whether a memory dump is code). It is also somewhat disturbing to note the relatively low percentage of COBOL tools since COBOL is the most frequently used programming language. The main reason for this fact is that for COBOL-type applications, the traditional tools have been oriented toward data management problems. A proliferation of tools oriented specifically to the COBOL language (compilers excluded) is a phenomenon that is just recently starting to appear. In fact, approximately 25 percent of the last 60 tools that were added to the database are COBOL tools.

VHLL Input - accepts a program written in a very high level language that is typically not in an executable form. Tools with this feature may define programs, track program requirements throughout their development, or synthesize programs through use of some non-procedural VHLL. The list that follows shows the number and percentage of tools that fall in this class.

DESIGN SPECIFICATION	23	(6%)
REQUIREMENTS SPECIFICATION	13	(3%)
DESCRIPTION LANGUAGE	8	(2%)
STRUCTURED LANGUAGE	7	(1%)
PROGRAM SPECIFICATION	6	(1%)
REQUIREMENTS LANGUAGE	6	(1%)
DESIGN LANGUAGE	5	(1%)

SYSTEM SPECIFICATION.....	4	(0%)
SPECIFICATION LANGUAGE.....	1	(0%)
ALGEBRAIC SPECIFICATIONS.....	1	(0%)
MODEL SPECIFICATION.....	1	(0%)

Data Input - accepts a string of characters to which meaning is or might be assigned. The input (e.g. raw data) is not in an easily interpreted, natural language form.

Text Input - accepts statements in a natural language form. Certain types of tools are designed to operate on text only (e.g., text editors, document preparation systems) and require no other input except directives or commands. In most cases, these tools are oriented toward the development of documentation. Because the emphasis of the database is on tools that are specific to software development, there are many tools that have text as input that are not included in the database. Examples of excluded tools are general purpose text editors, data base management systems, report generators, and text processors.

Control Input. Tools that have control input features accept statements or data that specify the type of operations and any detail associated with the operations. Unfortunately, features in this area are very difficult to determine from tool descriptions. In a few cases, tools are described as being very interactive and a classification may be assumed. However, without actually seeing samples of the user input, features would have to be guessed. Consequently, very little data was collected and the results are not reported in this publication. This does not mean that control input features are not important. They relate to the user interface, which in many cases determines user acceptance or rejection of a tool. Tool descriptions sorely lack this type of information.

FUNCTION

The features for this class describe the processing functions performed by a tool and fall into three classes: transformation, static analysis, and dynamic analysis.

Transformation. Transformation features describe how the subject is manipulated to accommodate the user's needs. They describe what transformations take place as the input to the tool is processed. The list that follows shows the number and percentage of tools that have transformation features.

FORMATTING	48	(13%)
TRANSLATION	45	(12%)
INSTRUMENTATION	42	(11%)
EDITING	29	(8%)
SYNTHESIS	17	(4%)
RESTRUCTURING	14	(3%)
OPTIMIZATION	6	(1%)

Appendix C lists tools with these features and with the extensions defined for translation.

Formatting - arranging a program according to predefined or user defined conventions. A tool that "cleans up" a program by making all statement numbers sequential, alphabetizing variable declarations, indenting statements, and making other standardizing changes has this feature.

Translation - converting from one language form to another. Tools that have this feature can be further classified with the following extensions: compilation, structure preprocessing, macro expansion and conversion. The list that follows shows the number and percentage of translation tools that have been further classified.

STRUCTURE PREPROCESSING	18	(4%)
COMPILATION	8	(2%)
MACRO EXPANSION	8	(2%)
CONVERSION	7	(1%)

Instrumentation - adding sensors and counters to a program for the purpose of collecting information useful for dynamic analysis. Most code analyzers instrument the source code at strategic points in the program to collect execution statistics required for coverage analysis and tuning. See dynamic analysis features.

Editing - modifying the content of the subject by inserting, deleting, or moving characters, numbers, or data. Of course, there are a very large number of tools that have this feature that are not included in the database. Many of the ones that are included provide editing to enhance the capability of the user environment. Most tools do not include an editing capability and therefore require users to modify the subject through use of a vendor supplied editor.

Synthesis - generating an application or program from a specification or from an intermediate language. Tools that have this feature include application generators, program generators, compiler compilers, and preprocessor generators. Tools with this feature show promise toward increasing programmer productivity; thus there is considerable

research and development going on in this area.

Restructuring - reconstructing and arranging the subject in a new form according to well-defined rules. A tool that generates structured code from unstructured code is an example of a tool with this feature.

Optimization - modifying a program to improve performance, e.g. to make it run faster or to make it use fewer resources. Many vendors' compilers provide this feature. There are many tools that claim this feature, but do not really modify the subject program. Instead, these tools provide data on the results of execution which may be used for tuning purposes. See tuning under dynamic analysis.

Static Analysis. Static analysis features describe operations on the subject without regard to the executability of the subject. They describe the manner in which the subject is analyzed. The list that follows shows the static analysis features with the number of times they occur and their percentages.

MANAGEMENT	95	(26%)
CROSS REFERENCE	61	(16%)
SCANNING	56	(15%)
AUDITING	30	(8%)
DATA FLOW ANALYSIS	22	(6%)
CONSISTENCY CHECKING	20	(5%)
STATISTICAL ANALYSIS	19	(5%)
ERROR CHECKING	19	(5%)
STRUCTURE CHECKING	19	(5%)
COMPARISON	15	(4%)
COMPLETENESS CHECKING	13	(3%)
COMPLEXITY MEASUREMENT	12	(3%)
TRACKING	12	(3%)
INTERFACE ANALYSIS	11	(3%)
I/O SPECIFICATION ANALYSIS	5	(1%)
TYPE ANALYSIS	3	(0%)
COST ESTIMATION	2	(0%)
UNITS ANALYSIS	2	(0%)
SCHEDULING	2	(0%)

Appendix D lists the tools with these features and with the extensions for management and statistical analysis.

Management - aiding the management or control of software development. Because of its broad coverage, management is further extended into the following areas:

CONFIGURATION MANAGEMENT.....	20	(5%)
GLOBAL VARIABLE MANAGEMENT.....	18	(4%)
PROJECT MANAGEMENT.....	18	(4%)
DATA BASE MANAGEMENT.....	13	(3%)
CHANGE CONTROL.....	11	(3%)
TEST DATA MANAGEMENT.....	10	(2%)
FILES MANAGEMENT.....	10	(2%)
LIBRARY MANAGEMENT.....	9	(2%)
VERSION CONTROL.....	7	(1%)
DOCUMENTATION MANAGEMENT.....	5	(1%)
PERFORMANCE MANAGEMENT.....	3	(0%)
CAPACITY PLANNING.....	2	(0%)
MANAGEMENT PLANNING.....	1	(0%)

Cross Reference - referencing entities to other entities by logical means.

Scanning - examining an entity sequentially to identify key areas or structure.

Auditing - conducting an examination to determine whether or not predefined rules have been followed.

Data Flow Analysis - graphical analysis of the sequential patterns of definitions and references of data.

Consistency Checking - determining whether or not each entity is internally consistent in the sense that it contains uniform notation and terminology, and is consistent with its specification.

Statistical Analysis - performing statistical data collection and analysis.

Error Checking - determining discrepancies, their importance, and/or their cause.

Structure Checking - detecting structural flaws within a program (e.g. improper loop nestings, unreferenced labels, unreachable statements, and statements with no successors).

Comparison - determining and assessing differences between two or more items.

Completeness Checking - assessing whether or not an entity has all its parts present and if its parts are fully developed.

Complexity Measurement - determining how complicated an entity (e.g., routine, program, system, etc.) is by evaluating some number of associated characteristics. For example, the following characteristics can impact complexity:

instruction mix, data references, structure/control flow, number of interactions/interconnections, size, and number of computations.

Tracking - tracking the development of an entity through the software life cycle.

Interface Analysis - checking the interfaces between program elements for consistency and adherence to predefined rules and/or axioms.

I/O Specification Analysis - analyzing the input and output specification in a program, usually for the purpose of generating input data.

Type Analysis - evaluating whether or not the domain of values attributed to an entity are properly and consistently defined.

Cost Estimation - assessing the behavior of the variables which impact life cycle cost.

Units Analysis - determining whether or not the units or physical dimensions attributed to an entity are properly defined and consistently used.

Scheduling - assessing the software development schedule and its impact on the software life cycle.

Dynamic Analysis. Dynamic analysis features specify operations that are determined during or after execution takes place. Dynamic analysis features differ from those classified as static by virtue of the fact that they require some form of symbolic or machine execution. They describe the techniques used by the tool to derive meaningful information about a program's execution behavior. The list that follows shows the 10 dynamic analysis features along with the number of times they occur and their percentages.

COVERAGE ANALYSIS	40	(11%)
TRACING	30	(8%)
TUNING	29	(8%)
SIMULATION	19	(5%)
TIMING	18	(4%)
RESOURCE UTILIZATION	17	(4%)
SYMBOLIC EXECUTION	10	(2%)
ASSERTION CHECKING	9	(2%)
REGRESSION TESTING	6	(1%)
CONSTRAINT EVALUATION	3	(0%)

Appendix E lists the tools with these features and with the extensions for tracing.

Coverage Analysis - determining and assessing measures associated with the invocation of program structural elements to determine the adequacy of a test run. Coverage analysis is useful when the user is attempting to execute each statement, branch, path, or iterative structure (i.e., DO loops in FORTRAN) in a program.

Tracing - tracing the historical record of execution of a program. Because of its broad coverage, tracing has been, in many cases, further extended into the following areas:

PATH FLOW TRACING.....	13	(3%)
BREAKPOINT CONTROL.....	2	(0%)
LOGIC FLOW TRACING.....	2	(0%)
DATA FLOW TRACING.....	1	(0%)

Tuning - determining what parts of a program are being executed the most.

Simulation - representing certain features of the behavior of a physical or abstract system by means of operations performed by a computer.

Timing - reporting actual CPU times associated with a program or its parts.

Resource Utilization - analysis of resource utilization associated with system hardware or software.

Symbolic Execution - reconstructing logic and computations along a program path by executing the path with symbolic, rather than actual values of data.

Assertion Checking - checking of user-embedded statements that assert relationships between elements of a program. An assertion is a logical expression that specifies a condition or relation among the program variables. Checking may be performed with symbolic or run-time data.

Regression Testing - rerunning test cases which a program has previously executed correctly in order to detect errors spawned by changes or corrections made during software development and maintenance.

Constraint Evaluation - generating and/or solving path input or output constraints for determining test input or for proving programs correct.

OUTPUT

Output features provide links from the tool to both the human user and the target machine (where applicable). They describe the types and forms of outputs that are produced by a tool.

User Output. User output features describe the types of information that are returned from the tool to the human user and the forms in which these outputs are presented. There are five user output features. The list that follows shows the number and percentage of tools that fall in these classes.

LISTINGS	171	(47%)
TABLES	151	(41%)
DIAGNOSTICS	84	(23%)
GRAPHICS	77	(21%)
USER-ORIENTED TEXT	59	(16%)

Appendix F lists the tools with these features and with the extensions for graphics and user-oriented text.

Listings - output that lists source programs or data and that may be annotated.

Tables - output that is arranged in parallel columns to exhibit a set of facts or relations in a definite, compact and comprehensive form.

Diagnostics - output that simply indicates what software discrepancies have occurred.

Graphics - a graphical presentation with symbols indicating operations, flow, etc. Graphics is further extended into the following areas:

FLOW CHARTS	20	(5%)
HIERARCHICAL TREE	8	(1%)
DESIGN CHARTS	7	(1%)
ACTIVITY DIAGRAM	4	(1%)
CHARTS	2	(0%)
HIPO CHARTS	1	(0%)
LINE GRAPHS	1	(0%)
BAR CHARTS	1	(0%)
CONTROL MAP	1	(0%)
HISTOGRAMS	1	(0%)
MILESTONE CHARTS	1	(0%)
ACTIVITY DIAGRAMS	1	(0%)
STRUCTURE CHARTS	1	(0%)

User-Oriented Text - output that is in a natural language form. User-oriented text is further extended into the following areas:

DOCUMENTATION	39	(10%)
REPORTS	23	(6%)

Machine Output. Machine output features handle the interface from the tool to a non-human user. The machine output can be directed to a target machine or to another tool for further processing. Machine output features describe what the receiving tool or machine expects as output. The list that follows shows the number and percentage of tools that fall in these classes.

SOURCE CODE OUTPUT	103	(28%)
. FORTRAN	45	(12%)
. COBOL	27	(7%)
. JOVIAL	7	(1%)
. PL/1	2	(0%)
. SRTRAN	2	(0%)
. BASIC	1	(0%)
. COMPASS	1	(0%)
. IFTRAN	1	(0%)
. SMAL/80	1	(0%)
. RATFOR	1	(0%)
. ALGOL	1	(0%)
. SFTRAN	1	(0%)
. SIMULA	1	(0%)
. ATOM	1	(0%)
. CMS-2	1	(0%)
DATA OUTPUT	16	(4%)
OBJECT CODE OUTPUT	9	(2%)
INTERMEDIATE CODE	4	(1%)
VHLL OUTPUT	2	(0%)
PROMPTS	1	(0%)

Note that source code output features have been, in many cases, further classified according to the specific language that is output. Appendix G lists the tools in each class.

Source Code - a program written in a procedural language that must be input to a translation process before execution can take place.

Data - a set of representations of characters or numeric quantities to which meaning has been assigned.

Object Code - a program expressed in machine language which is normally an output of a given translation process.

Intermediate Code - code that is between source code and machine code.

VHLL - a program written in a very high level language.

Prompts - a series of procedural operators that are used to interactively inform the system in which the tool operates that it is ready for the next input.

2.3 The Environment of Software Tools

The environment required by a tool depends on how portable the tool is. The list that follows shows the number and percentage of tools [1] that are considered portable, partially portable, or not portable.

PORTABLE		
YES.....	69	(19%)
NO.....	26	(7%)
PARTIAL.....	6	(1%)

A tool is considered portable if (1) it is written in a portable subset of a language, (2) it is written according to a Federal standard for a language, or (3) it is available on three or more different manufacturers' computers of significantly different architecture. A tool is considered partially portable if it is available on different manufacturers' computers of significantly different architecture or minor modifications are required to move it to other machines. Appendix H lists the portable tools.

Another important environmental factor is the language or languages in which a tool is written. The list that follows shows the number and percentage of tools by source language.

FORTRAN.....	182	(50%)
COBOL.....	48	(13%)
ASSEMBLY.....	23	(6%)
PASCAL.....	18	(4%)
PL/1.....	14	(3%)
STRUCTURED FORTRAN.....	11	(3%)
JOVIAL.....	10	(2%)

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[1] This is an example where little information was given about a subject. 76 percent of the tools in the database lack information about portability.

BASIC	9	(2%)
COMPASS	7	(1%)
BAL	6	(1%)
C	5	(1%)
SLEUTH	4	(1%)
RATFOR	3	(0%)
LISP	3	(0%)
SCOBOL	2	(0%)
IFTRAN	2	(0%)
OBJECT	2	(0%)
RPG	2	(0%)
SIMSCRIPT	2	(0%)
ALC	2	(0%)
SRTRAN	2	(0%)
MACRO-11	1	(0%)
SMAL/80	1	(0%)
PWS	1	(0%)
SNOBAL	1	(0%)
SALSIM	1	(0%)
PLS	1	(0%)
SYMPL	1	(0%)
PFORT	1	(0%)
MODULA	1	(0%)
SIMULA	1	(0%)
KCL	1	(0%)
GIM	1	(0%)

Appendix I lists the tools by source language. Information on the language dialects is provided for each tool in Appendix N. As one would expect, FORTRAN and COBOL are the most popular tool languages.

The hardware requirements of a tool have the largest impact on the environment. Many tools may require the presence of a specific manufacturer's hardware system. Others have simply been developed on a specific system and their availability on other systems has not been tested [1]. The list that follows profiles the hardware systems that are referenced by the tools in the database.

---

[1] This fact is evident in the low percentages shown previously for portability.

IBM 360/370	.....	105	(29%)
CDC 6X00/7X00	.....	75	(20%)
UNIVAC 11XX	.....	40	(11%)
HONEYWELL 6XXX	.....	21	(5%)
DEC PDP-11	.....	21	(5%)
CDC CYBER	.....	16	(4%)
DEC VAX-11	.....	12	(3%)
DECSYSTEM-10/20	.....	11	(3%)
AMDAHL 470	.....	8	(2%)
HONEYWELL 6XX	.....	5	(1%)
CII-HB	.....	5	(1%)
CDC 3XXX	.....	4	(1%)
MODCOMP	.....	3	(0%)
HP 85	.....	2	(0%)
SEL 32	.....	2	(0%)
INTEL 8080/8085	.....	2	(0%)
IBM 3033	.....	2	(0%)
XDS SIGMA X	.....	2	(0%)
EC	.....	1	(0%)
PLESSEY MICRO I	.....	1	(0%)
IBM SYSTEM 3	.....	1	(0%)
DATA GENERAL	.....	1	(0%)
BURROUGHS B6700	.....	1	(0%)
TSS	.....	1	(0%)
TI	.....	1	(0%)
NO. 1 ESS	.....	1	(0%)
FACOM 230-60	.....	1	(0%)
BURROUGHS B3500	.....	1	(0%)
ONYX	.....	1	(0%)
APPLE II	.....	1	(0%)
LILITH	.....	1	(0%)
DEC/GT4X	.....	1	(0%)

Appendix J lists the tools by these hardware systems.

In addition to hardware, many tools also require the presence of a specific manufacturer's software systems. The list that follows profiles the software systems that are referenced by the tools in the database.

OS/VS	.....	28	(7%)
OS/MVS	.....	25	(6%)
OS	.....	23	(6%)
GCOS	.....	13	(3%)
RSX-11	.....	11	(3%)
DOS	.....	11	(3%)
VMS	.....	10	(2%)
DOS/VS	.....	8	(2%)
NOS	.....	8	(2%)
MULTICS	.....	7	(1%)
ECL	.....	6	(1%)
UNIX	.....	6	(1%)

SVS	.....	5	(1%)
TSO	.....	5	(1%)
EXEC 8	.....	5	(1%)
KRONOS	.....	4	(1%)
VM/CMS	.....	3	(0%)
OS/MVT	.....	3	(0%)
RSTS	.....	3	(0%)
SIRIS	.....	3	(0%)
TOPS-10/20	.....	2	(0%)
SCOPE 3.4	.....	2	(0%)
RT-11	.....	1	(0%)
IAS	.....	1	(0%)
MASTER	.....	1	(0%)
SCP	.....	1	(0%)
INTERLISP	.....	1	(0%)
4JS2	.....	1	(0%)
CDC 6600 SECRE	.....	1	(0%)

Appendix K lists the tools by these software systems.

2.4 Availability of Software Tools

Many tools have restrictions on their outside availability or are for internal use by a company or research organization. These organizations are willing to share information about their tools for professional reasons, but are not necessarily willing to make their tools generally available. The list that follows shows the number and percentage of tools by their availability to potential users [1].

AVAILABLE

YES.....	187	(51%)
NO.....	24	(6%)

Many tools are developed for non-commercial purposes. These tools, in many cases, are made available to the general public for no cost or at a nominal cost. When this is the case the

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[1] Although one might consider it likely that an organization would make known the availability of a tool, the percentages indicate that this may not be the case. When a tool is developed by a non-marketing group of an organization, the decision to make a tool available depends on proprietary concerns, mission reviews, market studies, and personnel availability. These issues put many tools into an unknown category of public availability.

tools are considered to be in the public domain. The most common repositories for public domain tools are the National Technical Information Service (NTIS) Computer Products Support Group [1], the Federal Software Exchange [2], the Computer Software Management and Information Center (COSMIC) [3], and the many computer user groups that are either directly or indirectly supported by computer hardware vendors. The list that follows shows the number and percentage of tools by their availability in the public domain.

PUBLIC DOMAIN
YES..... 57 (15%)
NO..... 116 (32%)

Appendix L lists the public domain tools.

Other information about the availability of tools is also stored in the database. This information includes restrictions on the availability such as copyright, licenses, legal agreements, etc. It also includes information about support for a tool and the current stage of development. This information can be found listed by tool in Appendix N.

2.5 Tool Literature and Sources

Documentation is the most important source of information for users, developers, and maintainers of software tools. The list that follows includes many of the more common and not so common forms of documentation that are referenced by the tools in the database.

---

[1] Computer Products Support Group, National Technical Information Service, 5285 Port Royal Road, Springfield, VA, 22161, (703) 557-4763.

[2] Software Exchange Program, GSA(CF), 2 Skyline Plaza (11th Floor), 5203 Leesburg Pike, Falls Church, VA, 22041, (703) 756-2610.

[3] COSMIC, Computer Software Management and Information Center, 112 Barrow Hall, University of Georgia, Athens, GA, 30602, (404) 542-3265.

USER´S MANUAL	.....	154	(42%)
USER´S GUIDE	.....	49	(13%)
MAINTENANCE MANUAL	.....	47	(12%)
TECHNICAL PAPER	.....	34	(9%)
DEVELOPMENT SPECIFICATION	.....	23	(6%)
TEST PLAN	.....	20	(5%)
TECHNICAL REPORT	.....	20	(5%)
PROGRAMMER´S GUIDE	.....	13	(3%)
PROGRAM DESCRIPTION	.....	12	(3%)
REFERENCE MANUAL	.....	10	(2%)
IMPLEMENTATION GUIDE	.....	8	(1%)
DESIGN SPECIFICATION	.....	7	(1%)
SYSTEM DESCRIPTION	.....	7	(1%)
REQUIREMENTS SPECIFICATION	.....	4	(1%)
DESCRIPTIVE BROCHURE	.....	2	(0%)
REFERENCE CARD	.....	2	(0%)
HELP	.....	2	(0%)
USER INSTRUCTIONS	.....	2	(0%)
TEST ANALYSIS REPORT	.....	2	(0%)
INPUT DESCRIPTION	.....	1	(0%)
GENERAL INFORMATION MANUAL	.....	1	(0%)
TECHNICAL WORKBOOK	.....	1	(0%)
SOFTWARE SUMMARY	.....	1	(0%)
USER INFORMATION NOTE	.....	1	(0%)
CAPABILITIES BRIEFING	.....	1	(0%)
TUTORIAL	.....	1	(0%)
PROGRAMMED INSTRUCTION COURSE	.....	1	(0%)
BEGINNERS GUIDE	.....	1	(0%)
PRIMER	.....	1	(0%)
MANAGER´S GUIDE	.....	1	(0%)

In many cases information about documentation was not available in the sources used for the database. However, it is still worthwhile to note that of all the tool descriptions analyzed, only about half mentioned the availability of a user´s manual or a user´s guide.

The list that follows includes a sampling of the publications that were cited most often in references to articles available in the open literature. These publications often include articles and papers on software tools.

ACM COMPUTING SURVEYS
BELL SYSTEM TECHNICAL JOURNAL
COMMUNICATIONS OF THE ACM
COMPUTER
COMPUTER DECISIONS
COMPUTERWORLD
CONGRESSO AICA
DATAMATION
ELECTRONIC DESIGN
IEEE COMPUTER SOCIETY PUBLICATIONS

IEEE TRANSACTIONS ON SOFTWARE ENGINEERING
INFOTECH STATE OF THE ART REPORTS
NBS COMPUTER SCIENCE AND TECHNOLOGY SERIES
PERFORMANCE EVALUATION REVIEW
PROCEEDINGS OF COMPCON
PROCEEDINGS OF COMPSAC
PROCEEDINGS OF HICSS
PROCEEDINGS OF ICSE
PROCEEDINGS OF NCC
PROCEEDINGS OF THE ACM COMPUTER SCIENCE CONFERENCE
PROCEEDINGS OF THE ACM SOFTWARE QUALITY WORKSHOP
PROCEEDINGS OF THE AFIPS CONFERENCE
PROCEEDINGS OF THE AIAA COMPUTERS IN AEROSPACE CONFERENCE
PROCEEDINGS OF THE ASILOMAR CONFERENCE
PROCEEDINGS OF THE DESIGN AUTOMATION CONFERENCE
PROCEEDINGS OF THE EUROPEAN CONFERENCE ON COMPUTER MEASUREMENT
PROCEEDINGS OF THE INT. CONFERENCE ON RELIABLE SOFTWARE
PROCEEDINGS OF THE NASA SOFTWARE ENGINEERING WORKSHOP
PROCEEDINGS OF THE NSIA SOFTWARE CONFERENCE
PROCEEDINGS OF THE SYMPOSIUM ON COMPUTER SOFTWARE RELIABILITY
PROCEEDINGS OF THE WORKSHOP ON RELIABLE SOFTWARE
PROCEEDINGS THE MRI SYMP. ON COMPUTER SOFTWARE ENGINEERING
RADC TECHNICAL REPORTS
SOFTWARE-PRACTICE AND EXPERIENCE
SOFTWARE ENGINEERING NOTES
SOFTWARE TOOLS COMMUNICATIONS
TESTING TECHNIQUES NEWSLETTER

There is a great diversity among the developers of tools. Tool developers can be found within governments, industries, universities, and private homes. The list that follows is a profile of the various types of tool developers.

COMMERCIAL RESEARCH ORGANIZATIONS	...	146	(40%)
COMMERCIAL VENDORS OF TOOLS	...	122	(33%)
UNIVERSITIES	...	27	(7%)
US GOVERNMENT AGENCIES	...	26	(7%)
US GOVERNMENT SUPPORTED RESEARCH CENTERS	...	25	(6%)
FOREIGN GOVERNMENTS	...	10	(2%)
INDIVIDUALS	...	5	(1%)

It can be seen from the list that a vast majority of software development tools are not necessarily marketed commercially. The largest group of non-vendors are commercial research organizations. These organizations have developed software tools in-house primarily for their own use and do not actively market tools. Government supported research centers are non-profit organizations that perform work primarily under Government contract.

The list that follows shows the information sources for the tools that are included in the database.

TRW SOFTWARE TOOLS CATALOG [ASDS79]	.....	101	(27%)
AIAA SURVEY OF SOFT DEV TOOLS [AIAA79]	.....	74	(20%)
COMPLETED SUBMISSION TO NBS	.....	67	(18%)
NBS/IEEE/ACM TOOL FAIR [Houg81a]	.....	35	(9%)
PRODUCT DESCRIPTION	.....	26	(7%)
RADC-TR-80-13, INTERIM REPORT [Dona80]	.....	25	(6%)
NOSC SEATECS TOOLS SURVEY [Reif81]	.....	24	(6%)
TECHNICAL LITERATURE	.....	11	(3%)
FEDERAL SOFT EXCHANGE CATALOG [GSA80]	.....	6	(1%)
ADI/CNRS CATALOGUE 1980 [Andr80]	.....	5	(1%)
BCS TOOLS CATALOG [BCS79]	.....	4	(1%)
NTIS [NTIS80]	.....	3	(0%)

Appendix M lists the tools by the information sources.

Information for the database was solicited through announcements in trade publications, Commerce Business Daily, and NBS publications. The preferred response from the solicitation was a completed paper submitted to NBS by the developer or user of a tool. When this was the case, the information obtained was usually complete and all the possible records for a tool could be filled and stored in the database. However in most cases, information was referred to NBS through various catalogs, surveys, product descriptions, and technical papers. Consequently, there are occasional gaps in the information. The most notable areas are portability, availability, user interface, and documentation.

Finally, people are the most common sources for information about tools. The database maintains records of people who are contacts for information about tools or who have submitted information about tools. For the sake of curiosity, the geographic location of these people was compiled. The list that follows shows the distribution [1] by country and state.

STATE			
CALIFORNIA	.....	107	(23%)
NEW YORK	.....	29	(6%)
MARYLAND	.....	26	(5%)
VIRGINIA	.....	25	(5%)
MASSACHUSETTS	.....	24	(5%)

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[1] The percentages are based on the total number of people associated with tools, not on the total number of tools.

PENNSYLVANIA	.....	17	(3%)
NEW JERSEY	.....	14	(3%)
WASHINGTON	.....	13	(2%)
DIST OF COLUMBIA	.....	11	(2%)
TEXAS	.....	10	(2%)
ILLINOIS	.....	10	(2%)
MICHIGAN	.....	8	(1%)
OHIO	.....	7	(1%)
COLORADO	.....	6	(0%)
GEORGIA	.....	6	(1%)
OREGON	.....	5	(1%)
ALABAMA	.....	5	(1%)
FLORIDA	.....	4	(0%)
KANSAS	.....	3	(0%)
MISSOURI	.....	2	(0%)
ARIZONA	.....	2	(0%)
TENNESSEE	.....	2	(0%)
UTAH	.....	2	(0%)
NEW HAMPSHIRE	.....	2	(0%)
MINNESOTA	.....	2	(0%)
WEST VIRGINIA	.....	2	(0%)
NORTH CAROLINA	.....	2	(0%)
IOWA	.....	1	(0%)
CONNECTICUT	.....	1	(0%)
IDAHO	.....	1	(0%)
NEW MEXICO	.....	1	(0%)
OKLAHOMA	.....	1	(0%)
WISCONSIN	.....	1	(0%)
COUNTRY			
FRANCE	.....	11	(2%)
CANADA	.....	8	(1%)
WEST GERMANY	.....	7	(1%)
JAPAN	.....	4	(0%)
ENGLAND	.....	4	(0%)
ISRAEL	.....	3	(0%)
SWEDEN	.....	3	(0%)
NEW ZEALAND	.....	2	(0%)
AUSTRIA	.....	1	(0%)
CZECHOSLOVAKIA	.....	1	(0%)
ITALY	.....	1	(0%)
SOUTH AFRICA	.....	1	(0%)
MEXICO	.....	1	(0%)
NETHERLANDS	.....	1	(0%)
NORWAY	.....	1	(0%)

As one might expect, California turned out with the highest percentage. The names and addresses of the people who are contacts for tools in the database are printed by tool in Appendix N.

3. Conclusions

As noted in Section 1, the main purposes for compiling information on software tools were to obtain information to support NBS efforts and to transfer information to the Federal Government, industry, and research groups. The database has served these purposes. The features of software tools that appeared in an earlier version of the database have aided the development of the taxonomy of tool features reported in Section 2. The taxonomy is slated for further publications and is being used as a basis for several ongoing NBS efforts.

In the area of information transfer, the database helped the General Services Administration locate Government-owned software tools for inclusion in the Federal Software Exchange Catalog. In addition, information from the database was made available to many people in the Federal Government, including many members of the Federal ADP Users Group. The database was demonstrated at the 5th International Conference on Software Engineering and the National Computer Conference. An earlier report on the database has received wide distribution both inside and outside the Government.

Since the purposes for the database have been accomplished, plans are being made for transferring the database from NBS to the Data and Analysis Center for Software (DACS) [Duva80]. DACS was established in August of 1978 to serve as a central source for information and data on software technology by the Rome Air Development Center. The NBS database will form a basis for the DACS Software Tools Database. It is understood that DACS intends to implement the DACS database under the National Software Works (NSW) and to offer a user-oriented software tool search capability.

Acknowledgments. The author wishes to acknowledge the contributions of others in the development of the NBS Software Tools Database. The need for the database was established at the IEEE Testing and Documentation Workshop, Fort Lauderdale, FL, December 1978 which was attended by Dr. Selden Stewart, Dr. W. Richards Adrion, and Dr. Martha Branstad of NBS. During one of the discussion sessions, it was concluded that a public information exchange on software tools was needed and NBS agreed to initiate its development. Drs. Stewart, Adrion, and Branstad have each, at one time or another, supervised the development of the database. During the initiation of the database, Dr. Donald Deutsch, Dr. Leonard Gallagher, and Mr. Charles Sheppard of NBS provided much assistance in the use of relational models for the tool data. Programs for the database were developed in Pascal/R [Schm80] which is an extension of Pascal developed at the University of Hamburg, West Germany. The extension allows the

programmer to specify and use data relations within the Pascal programming language, which in essence, allows one to establish a relational database. Assistance in populating the data base and editing the tool information was provided by Ms. Karen Oakley. Programming assistance was provided by Ms. Sheila Frankel and Ms. Karen Oakley. Review and translation of parts of [Andr80] were provided by Ms. Victoria Roy.

4. References

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APPENDIX A

TOOLS BY GENERAL CLASSIFICATION

SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE TOOLS (MAC)

ABS	ACT/1	ADS/CERL	AFS
ALIAS	ASA-PMS	ASC	ASEQ
AUTDOC	AUTOCOM	AUTOFLOW/TRW	AUTOFLOW(TM)*
AUTOMATIC DOCUM	AUTORETEST	BLKGEN-BDD	BLKGEN/SPECPN
BUDGET VS ACTUA	CADMUS	CALLREF	CAPTURE/MVS(TM)**
CHECKSUM	COMDIM	COMGEN	COMGEN/TRW
COMLIST/TRW	COMLIST	COMPARE	COMSORT
COMSTAR	CONFIG	CPA	CPAL
CROREF	CTC	CUE	DA
DATAMACS	DCD	DECKBOY COMPAR	DEPCHT
DICTANL/LOCATE	DIFFS (TM)***	DIRCOM	DOCGEN
DOCU/TEXT	DOCUMENTER	DOCUMENTER A	DOCUMENT
DOCUMENTOR	DOSSIER	DPNDCY	EASYTROL
ESAP	FLOBOL	FLODIA	FLOWGEN
FORMAN	FORREF	FORTREF	FTNCODER
GADTR AID	GIM/GIM II	GIRAFF	HARP
INFORM/REFORM	INSERT	ISUS	JET
JSDD	LANG INSTRUCTOR	LAYOUT	LEXICON
LIBRARIAN	LIBREF	LOGIFLOW	LOGOS
LOOK	MEDL-X	MEMORY MNG LIB	MPS
N5500	N-SQUARED	NUMBER/DEC	ONLINE ASSIST
PAC II	PDS FLOW	PDSS	PFORT
PFS	PMCS	PMS IV	PPP
PROG COMP ANAL	PRONET	PSL	QCM
QCRT	QUICK-DRAW	REFER	RENAME
SDP	SLIB	SLIM	SMS
SMT	SNOOP	SPC	SPEAR
SPECTRUM-1	SPELL	SPREAD	SPRINT
TAPS/AM	TDBCOMP	TIDY	TOOLS DATABASE

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* AUTOFLOW IS A REGISTERED TRADEMARK OF APPLIED DATA RESEARCH, INC.
** CAPTURE/MVS IS A REGISTERED TRADEMARK OF BGS SYSTEMS, INC.
*** DIFFS (TM) IS A REGISTERED TRADEMARK OF SOFTWARE CONSULTING SERVICES

SOFTWARE MODELING AND SIMULATION TOOLS (SAM)

AISIM	ASRP	BEST/1 (TM)*	CRYSTAL (TM)*
DAS	DDPM	DPAD	HARDWARE SIMULA
MEDL-P	POD	SALSIM	SCERT
SDVS			

REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS TOOLS (RAD)

ADF	AFFIRM	ARTS	AUTO-DBO
AUTOIDEF0	CADSAT	CARA	CBLSHORT
COBOL/SP	CONFIGURATOR	CRISPFLOW	CS4
DARTS	DATA DESIGNER	DECA	DQM
FAME	FOSTRA	IORL	IPDS
ISDS	LOGICFLOW	MED-SYS	MEDL-R
MEDL-D	MSL	MTR	NETWORK PLANNER
PBASIC	PDL	PDS	PERCAM
PIDGIN-FASP	PSL/PSA	RA	RTT
SARA	SCG	SCG/DQM	SCHEMACODE
SCOPE	SDDL	SDL	SDP/MAYDA
SIGS	SPECLE/DARS	SREM	SREP
SRIMP	STAG/TEMS	STRUCTURE(S)	SYDIM
TRANSFOR	XAS8		

SOURCE PROGRAM ANALYSIS AND TESTING TOOLS (TAA)

ADS	AMPIC	ASSIST-I	ATA-FASP
ATA-SAI	ATDG	ATTEST	AUDIT
AUDITOR	BSC	CA	CADA
CASEGEN	CAVS	CCA	CCREF
CCS	CENSUS	CGJA	CICS DUMP ANALY
COBOL/DV	COBOL STRUCT	COBOL TRACING	COBOL/QDM
COBOL OPTIMIZ	COBOL TESTING	COBOL/CP	COMMAP
COMSCAN	CORE	COTUNE II	CPA-ADR
CQD	DAVE	DRIVER	DYNA
EAVS	ECA AUTOMATION	EFFIGY	ENFORCE
EVP	EXPEDITER	FACES	FADEBUG-I
FAST	FAVS	FCA	FORAN
FORTRAN TRACING	FORTRAN TESTING	FORTRAN OPTIMIZ	FTN-77 ANALYZER
FTN ANALYZER	FTNXREF	GENTESTS	GENTEXTS
GOTO-ANALYZER	HAWKEYE (TM)**	INSTRU	INTERFACE DOCUM
ITB	JAVS	JIGSAW	JOVIAL TCA
JOVIAL/J3SC	JOVIAL/VS	JOYCE	LOGIC
MENTOR	MONITOR	NASA-VATS	NODAL
NUMBER	OPTIMUS	OPTIMIZER II	OSCYBR
PACE	PACE-C	PET	PPE
PREF HDR GEN	PROGLOOK	RADC/FCA	REALIGNMENT SYS
REFLECT II	REFORM	REFTRAN (TM)***	REL MEAS MODEL
RISOS TOOLS	RXVP80 (TM)***	SADAT	SAP

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* BEST/1 AND CRYSTAL ARE REGISTERED TRADEMARKS OF BGS SYSTEMS, INC.
** HAWKEYE IS A REGISTERED TRADEMARK OF BLACKHAWK DATA CORP.
*** REFTRAN AND RXVP80 ARE REGISTERED TRADEMARKS OF GENERAL RESEARCH CORP.

SAP/H	SARA-U	SARA-H	SARA-III
SARA-IV	SCAN/370	SELECT	SPTRAN
SSA	STAT ENT & EVAL	STRUCTURING ENG	STRUCT
SUBCRS	SURVAYOR	SUS	SYDOC
SYMCRS	SYSTEM MONITOR	SYSXREF	TAFIRM
TATTLE	TCAT	TDEM	TEST PREDICTOR
TEVERE-1	TFA	THE ENGINE	TIMECS
TIMER	TPT	TRAILBLAZER	TSA/PPE
UCA	XPEDITER		

SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT TOOLS (ENV)

ADA ENVIRONMENT	ARGUS/MICRO	ASSET	COBOL/ADE
FASP	LILITH	MSEF	PWB FOR VAX/VMS
SEF	SOFTOOL 80 (TM)*	TOOLPACK	VIRTUAL OS

PROGRAM CONSTRUCTION AND GENERATION TOOLS (GEN)

ADA-ATOM	ADA COMPILER	CHILL TRANS	COBOL/SPP
COGENT	COPE (TM)**	CSPP	DI-3000
FOCUS	GRAFMAKER	IFTRAN (TM)***	INFORM
JOCIT	MAGLE	MARK IV (TM)****	MEFIA
METRAN	MODULE ORDERER	PERLUETTE	PROGRAM GENERAT
QUIKCODE	RATCODER	RATFOR	S-FORTRAN
SCOBOL (TM)*****	SFORT-1	SFTRAN3	SMAL/80
SMMA	SRTRAN.BASELINE	STRUC1/STRUC2	STRUCTURIZER
SURGE 72	SYSTEM-80	TAB40	UCSD P-SYSTEM
YACC			

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* SOFTOOL 80 IS A REGISTERED TRADEMARK OF SOFTOOL CORP.
** COPE IS A REGISTERED TRADEMARK OF SOFTWARE CONSULTING SERVICES
*** IFTRAN IS A REGISTERED TRADEMARK OF GENERAL RESEARCH CORP.
**** MARK IV IS A REGISTERED TRADEMARK OF INFORMATICS, INC.
***** SCOBOL IS A REGISTERED TRADEMARK OF SOFTWARE CONSULTING SERVICES

APPENDIX B

TOOLS BY INPUT SUBJECT

. . **TEXT INPUT**.....ACT/1

ADF	ARGUS/MICRO	DIFFS (TM)
FASP	IORL	LEXICON
LILITH	MEDL-D	MEDL-R
MEDL-X	MPS	ONLINE ASSIST
PDL	PDS	SARA
SCHEMACODE	SLIB	VIRTUAL OS

. . **DATA INPUT**.....ABS

ACT/1	ASC	BEST/1 (TM)
BUDGET VS ACTUA	CADMUS	CAPTURE/MVS(TM)
CHECKSUM	COMPARE	COMSTAR
CS4	DA	DECKBOY COMPAR
DI-3000	DICTANL/LOCATE	DOCU/TEXT
DOCUMENTER	DOCUMENT	DOSSIER
DPAD	DRIVER	EASYTROL
ESAP	FASP	FOCUS
FTNCODER	GADTR AID	GIM/GIM II
GRAFMAKER	HARP	INFORM
LAYOUT	LOOK	MARK IV (TM)
MENTOR	N5500	N-SQUARED
PAC II	PDSS	PERCAM
PFS	PMCS	PMS IV
PPP	PRONET	PSL/PSA
PWB FOR VAX/VMS	QCM	QCRT
RATCODER	REL MEAS MODEL	RTT
SARA-H	SARA-IV	SARA-III
SARA-U	SCERT	SLIM
SMT	SPECTRUM-1	SPREAD
SYDIM	SYSXREF	TAPS/AM
TIMECS	TOOLPACK	TOOLS DATABASE
TRMS	TRWPLT	

. . **CODE INPUT**.....ADA-ATOM

ADA COMPILER	ADA ENVIRONMENT	ADS
ADS/CERL	AFFIRM	AFS
ALIAS	AMPIC	ARGUS/MICRO
ASA-PMS	ASEQ	ASRP
ASSET	ASSIST-I	ATA-FASP

ATA-SAI	ATDG	ATTEST
AUDIT	AUDITOR	AUTDOC
AUTOCOM	AUTOFLOW/TRW	AUTOFLOW (TM)
AUTOMATIC DOCUM	AUTORETEST	BLKGEN/SPECPN
BLKGEN-BDD	BSC	CA
CADA	CADMUS	CALLREF
CASEGEN	CAVS	CBLSHORT
CCA	CCREF	CCS
CENSUS	CGJA	CHILL TRANS
CICS DUMP ANALY	COBOL STRUCT	COBOL/ADE
COBOL/QDM	COBOL/DV	COBOL/SPP
COBOL TESTING	COBOL OPTIMIZ	COBOL/CP
COBOL TRACING	COBOL/SP	COGENT
COMDIM	COMGEN/TRW	COMGEN
COMLIST/TRW	COMLIST	COMMAP
COMSCAN	COMSORT	CONFIG
CORE	COTUNE II	CPA
CPA-ADR	CPAL	CQD
CROREF	CS4	CSPP
CTC	CUE	DAS
DATAMACS	DAVE	DCD
DDPM	DEPCHT	DIRCOM
DOCGEN	DOCUMENTOR	DOCUMENTER A
DPNDCY	DRIVER	DYNA
EAVS	ECA AUTOMATION	EFFIGY
ENFORCE	ESAP	EVP
EXPEDITER	FACES	FADEBUG-I
FASP	FAST	FAVS
FCA	FLOBOL	FLODIA
FLOWGEN	FORAN	FORMAN
FORREF	FORTRAN OPTIMIZ	FORTRAN TRACING
FORTREF	FORTRAN TESTING	FOSTRA
FTN-77 ANALYZER	FTN ANALYZER	FTNCODER
FTNXREF	GENTESTS	GIRAFF
GOTO-ANALYZER	HARDWARE SIMULA	HAWKEYE (TM)
IFTRAN (TM)	INFORM/REFORM	INSERT
INSTRU	INTERFACE DOCUM	ISDS
ISUS	ITB	JAVS
JET	JIGSAW	JOCIT
JOVIAL/VS	JOVIAL/J3SC	JOVIAL TCA
JOYCE	JSDD	LANG INSTRUCTOR
LIBRARIAN	LIBREF	LILITH
LOGICFLOW	LOGIC	LOGIFLOW
LOGOS	MAGLE	MEFIA
MEMORY MNG LIB	MENTOR	MODULE ORDERER
MONITOR	MSEF	NASA-VATS
NODAL	NUMBER	NUMBER/DEC
OPTIMIZER II	OPTIMUS	OSCYBR
PACE	PACE-C	PBASIC
PDS	PDS FLOW	PET
PFORT	PPE	PREF HDR GEN
PROG COMP ANAL	PROGLOOK	PSL
PWB FOR VAX/VMS	QUICK-DRAW	QUIKCODE
RADC/FCA	RATFOR	REALIGNMENT SYS
REFER	REFLECT II	REFORM

REFTRAN (TM)	RENAME	RISOS TOOLS
RXVP80 (TM)	S-FORTRAN	SADAT
SALSIM	SAP	SAP/H
SCAN/370	SCG/DQM	SCOBOL (TM)
SCOPE	SDP	SDVS
SEF	SELECT	SFORT-1
SFTRAN3	SLIB	SMAL/80
SMMA	SMS	SOFTOOL 80 (TM)
SPC	SPEAR	SPELL
SPRINT	SPTRAN	SRTRAN.BASELINE
SSA	STAT ENT & EVAL	STRUCT
STRUCTURING ENG	STRUC1/STRUC2	SUBCRS
SURVAYOR	SUS	SYDOC
SYMCRS	SYSTEM MONITOR	TAFIRM
TATTLE	TCAT	TDBCOMP
TDEM	TEST PREDICTOR	TEVERE-1
TFA	THE ENGINE	TIDY
TIMER	TOOLPACK	TPT
TRAILBLAZER	TRANSFOR	TSA/PPE
UCA	UCSD P-SYSTEM	UF
VIRTUAL OS	X TO Y TRANS PK	XAS8
XPEDITER	YACC	

. . . BASIC.....BSC

DOCUMENTER	HARDWARE SIMULA	PBASIC
STAT ENT & EVAL		

. . . FORTRAN.....ADS/CERL

ALIAS	AMPIC	ARGUS/MICRO
ASEQ	ATA-SAI	ATDG
ATTEST	AUDITOR	AUDIT
AUTDOC	AUTOCOM	AUTOFLOW/TRW
AUTORETEST	BLKGEN/SPECPN	BLKGEN-BDD
CA	CASEGEN	CCREF
CENSUS	COMDIM	COMGEN
COMGEN/TRW	COMLIST/TRW	COMLIST
COMMAP	COMSCAN	COMSORT
CONFIG	CPAL	CROREF
DAVE	DEPCHT	DIRCOM
DOCGEN	DOCUMENTOR	DPNDCY
DRIVER	DYNA	EAVS
ECA AUTOMATION	EVP	FACES
FAST	FAVS	FCA
FLODIA	FLOWGEN	FORAN
FORMAN	FORREF	FORTRAN TRACING
FORTRAN OPTIMIZ	FORTRAN TESTING	FORTREF
FOSTRA	FTN-77 ANALYZER	FTN ANALYZER
FTNCODER	FTNXREF	GIRAFF
GOTO-ANALYZER	IFTRAN (TM)	INFORM/REFORM
INSERT	INSTRU	ISDS
ISUS	ITB	JOYCE
LANG INSTRUCTOR	LOGICFLOW	LOGIC
MEMORY MNG LIB	MONITOR	NODAL
NUMBER	OSCYBR	PACE
PDS	PET	PFORT

PREF HDR GEN	PSL	QUICK-DRAW
RADC/FCA	REFORM	REFTRAN (TM)
RENAME	RXVP80 (TM)	SADAT
SALSIM	SAP	SAP/H
SPELL	STRUCTURING ENG	STRUC1/STRUC2
SUBCRS	SURVAYOR	SUS
SYMCRS	TDEM	TEST PREDICTOR
TIDY	TOOLPACK	TPT
TRAILBLAZER	UCA	UCSD P-SYSTEM
X TO Y TRANS PK		

. . . CICS.....ADS

CICS DUMP ANALY	CORE	SCOPE

. . . COBOL.....AUTOFLOW (TM)

CADA	CAVS	CBLSHORT
COBOL TRACING	COBOL OPTIMIZ	COBOL/CP
COBOL STRUCT	COBOL/DV	COBOL TESTING
COBOL/QDM	COBOL/SPP	COBOL/ADE
COTUNE II	CPA	CPA-ADR
CQD	CSPP	CTC
DATAMACS	DCD	ENFORCE
EXPEDITER	FLOBOL	HAWKEYE (TM)
LANG INSTRUCTOR	LIBREF	NUMBER/DEC
OPTIMIZER II	PSL	QUICK-DRAW
QUIKCODE	REALIGNMENT SYS	SCAN/370
SCOBOL (TM)	SYDOC	TCAT
TFA	THE ENGINE	TRAILBLAZER
XPEDITER		

. . . PASCAL.....ARGUS/MICRO

UCSD P-SYSTEM	

. . . PCL.....CA

. . . COMPASS.....CCA

PACE-C	

. . . PL/1.....EFFIGY

QUICK-DRAW	TRAILBLAZER

. . . JOVIAL.....CGJA

EAVS	ISDS	JAVS
JET	JIGSAW	JOCIT
JOVIAL/J3SC	JOVIAL TCA	JOVIAL/VS
JSDD	PSL	SPEAR
TAFIRM	TATTLE	

. . . IFTRAN.....IFTRAN (TM)

RXVP80 (TM)	TEVERE-1

. . . STRUCTURED FORTRAN.....LOGOS

PDS	PDS FLOW	RATFOR
S-FORTRAN	SFORT-1	SFTRAN3
SPTRAN	SRTRAN.BASELINE	TRANSFOR

. . . BAL.....LOGICFLOW

. . . SMAL/80.....SMAL/80

. . . RATFOR.....RATFOR
VIRTUAL OS

. . . LISP.....LANG INSTRUCTOR
SELECT

. . . APL.....LANG INSTRUCTOR

. . . C.....MSEF
YACC

. . . JCVS.....JOVIAL/VS

. . . HAL/S.....NASA-VATS

. . . DMATRAN.....FAVS
STRUC1/STRUC2

. . . CHILL.....CHILL TRANS

. . . ALGOL.....LANG INSTRUCTOR

. . . SNOBOL.....LANG INSTRUCTOR

. . . ADA.....ADA-ATOM
ADA COMPILER ADA ENVIRONMENT

. . . OBJECT CODE INPUT.....CALLREF
INTERFACE DOCUM MODULE ORDERER PROG COMP ANAL

. . . ASSEMBLY LANGUAGE.....AMPIC
ASSIST-I CONFIG LOGICFLOW
MAGLE QUICK-DRAW RISOS TOOLS
XAS8

. . . MEMORY DUMP.....CICS DUMP ANALY
CORE

. . . SRTRAN.....ISUS
ITB SRTRAN.BASELINE

. . . CSL.....CS4

. . . MODULA.....LILITH

. . . MEFIA.....MEFIA

. . . SCOBOL.....SCOBOL (TM)

. . . CMS-2.....ATA-FASP

. . VHLL INPUT.....ADF

AFFIRM	AISIM	ARTS
AUTO-DBO	AUTOIDEF0	CADSAT
CARA	COGENT	CONFIGURATOR
COPE (TM)	CRISPFLOW	CRYSTAL (TM)
DARTS	DAS	DATA DESIGNER
DDPM	DECA	DQM
FAME	FOCUS	GENTEXTS
IFTRAN (TM)	INFORM	IORL
IPDS	ISDS	JIGSAW
JOCIT	LOGICFLOW	MARK IV (TM)
MED-SYS	MEDL-P	MEDL-D
MEDL-R	METRAN	MSL
MTR	NETWORK PLANNER	PDL
PDS	PERLUETTE	PIDGIN-FASP
POD	PROGRAM GENERAT	PSL/PSA
RA	RATFOR	RTT
S-FORTRAN	SALSIM	SARA
SCG	SCG/DQM	SCHEMACODE
SDDL	SDL	SDP/MAYDA
SFORT-1	SFTRAN3	SIGS
SNOOP	SOFTOOL 80 (TM)	SPECLE/DARS
SREM	SREP	SRIMP
STAG/TEMS	STRUCTURIZER	STRUC1/STRUC2
STRUCTURE(S)	SURGE 72	SYSTEM-80
TAB40	TRANSFOR	YACC

. . . PROGRAM SPECIFICATION.....COPE (TM)

PROGRAM GENERAT	STRUCTURIZER	SURGE 72
SYSTEM-80	TAB40	

. . . REQUIREMENTS SPECIFICATION.....ARTS

AUTOIDEF0	CARA	DARTS
DAS	DDPM	MEDL-R
NETWORK PLANNER	RA	RTT
SIGS	SREP	STAG/TEMS

. . . DESIGN SPECIFICATION.....ADF

AISIM	AUTO-DBO	AUTOIDEF0
DARTS	DAS	DATA DESIGNER
DDPM	DECA	DQM
IPDS	ISDS	MEDL-D
MSL	PDL	PIDGIN-FASP
SCG	SCG/DQM	SDL
SIGS	SNOOP	SPECLE/DARS
STRUCTURE(S)		

. . . SYSTEM SPECIFICATION.....CONFIGURATOR

CRYSTAL (TM)	MEDL-P	POD

. . . REQUIREMENTS LANGUAGE.....CADSAT

CARA	IORL	MED-SYS
PSL/PSA	SIGS	

. . . STRUCTURED LANGUAGE.....JIGSAW

```
                RATFOR          S-FORTRAN       SFORT-1
                SFTRAN3         STRUC1/STRUC2   TRANSFOR

. . . DESIGN LANGUAGE.........................LOGICFLOW
                MED-SYS         MTR             PDL
                PDS

. . . SPECIFICATION LANGUAGE..................SALSIM

. . . DESCRIPTION LANGUAGE....................FOCUS
                GENTEXTS        INFORM          JOCIT
                MARK IV (TM)    METRAN          PERLUETTE
                YACC

. . . ALGEBRAIC SPECIFICATIONS................AFFIRM

. . . MODEL SPECIFICATION.....................SRIMP
```

APPENDIX C

TOOLS BY TRANSFORMATION FEATURES

. . TRANSLATION.....ADA-ATOM

ADA COMPILER	ARGUS/MICRO	AUTO-DBO
CBLSHORT	CHILL TRANS	COBOL/CP
COBOL/SPP	COBOL/SP	CQD
CS4	CSPP	CTC
FASP	FAVS	IFTRAN (TM)
INSERT	JIGSAW	LILITH
MAGLE	MEFIA	MSEF
OSCYBR	QUIKCODE	RATFOR
RXVP80 (TM)	S-FORTRAN	SARA
SCOBOL (TM)	SFORT-1	SFTRAN3
SMAL/80	SMMA	SOFTOOL 80 (TM)
SPTRAN	SRIMP	SRTRAN.BASELINE
STRUC1/STRUC2	STRUCTURING ENG	TAB40
TRANSFOR	UCSD P-SYSTEM	VIRTUAL OS
X TO Y TRANS PK	XAS8	

. . . CONVERSION.....COBOL/CP

CTC	MAGLE	MEFIA
OSCYBR	SRIMP	X TO Y TRANS PK

. . . MACRO EXPANSION.....CBLSHORT

CQD	MSEF	QUIKCODE
SMAL/80	SMMA	TAB40
XAS8		

. . . STRUCTURE PREPROCESSING.....COBOL/SP

COBOL/SPP	CSPP	FAVS
IFTRAN (TM)	JIGSAW	RATFOR
RXVP80 (TM)	S-FORTRAN	SCOBOL (TM)
SFORT-1	SFTRAN3	SOFTOOL (80)
SPTRAN	SRTRAN.BASELINE	STRUC1/STRUC2
TRANSFOR	VIRTUAL OS	

. . . COMPILATION.....ADA-ATOM

ADA COMPILER	ARGUS/MICRO	CHILL TRANS
CS4	LILITH	MSEF
UCSD P-SYSTEM		

. . EDITING.....ABS

ACT/1	ARGUS/MICRO	AUTO-DBO
AUTOIDEF0	COBOL/QDM	FASP
IFTRAN (TM)	IORL	ISUS
JET	JOYCE	LIBRARIAN
LILITH	LOGICFLOW	MEDL-X
MPS	MSEF	PWB FOR VAX/VMS
RATCODER	RENAME	SCHEMACODE
SMT	SRIMP	TAPS/AM
THE ENGINE	TOOLPACK	UCSD P-SYSTEM
VIRTUAL OS		

. . RESTRUCTURING.....CAVS

FAVS	FOSTRA	HAWKEYE (TM)
LOGICFLOW	MENTOR	RXVP80 (TM)
SARA	SCG	SCHEMACODE
SPRINT	STRUC1/STRUC2	STRUCTURING ENG
THE ENGINE		

. . INSTRUMENTATION.....ARGUS/MICRO

ASSIST-I	ATA-FASP	ATA-SAI
ATTEST	CADA	CAVS
CGJA	COBOL TRACING	COBOL OPTIMIZ
COBOL TESTING	COTUNE II	DYNA
FASP	FAVS	FORTRAN OPTIMIZ
FORTRAN TRACING	FORTRAN TESTING	FTN-77 ANALYZER
FTN ANALYZER	IFTRAN (TM)	INSERT
INSTRU	ITB	JIGSAW
JOVIAL TCA	LOGIC	NODAL
PACE-C	PACE	PET
RXVP80 (TM)	SADAT	SOFTOOL 80 (TM)
TATTLE	TCAT	TDEM
TEST PREDICTOR	TFA	THE ENGINE
TPT	TRAILBLAZER	

. . FORMATTING.....ASEQ

AUTOMATIC DOCUM	CAVS	CBLSHORT
COBOL/QDM	COBOL/SP	COBOL/SPP
DI-3000	ENFORCE	FASP
FAVS	FTNCODER	GRAFMAKER
HAWKEYE (TM)	IFTRAN (TM)	JAVS
JET	LOGICFLOW	LOGOS
MODULE ORDERER	MPS	MSL
NUMBER	NUMBER/DEC	PDL
PDS	PSL	RATCODER
REALIGNMENT SYS	REFORM	RXVP80 (TM)
SARA	SCHEMACODE	SCOBOL (TM)
SDDL	SDL	SDP/MAYDA
SFORT-1	SOFTOOL 80 (TM)	SRIMP
SRTRAN.BASELINE	STRUC1/STRUC2	TAPS/AM
THE ENGINE	TIDY	TOOLPACK
UF	VIRTUAL OS	

. . SYNTHESIS.....COGENT

COPE (TM)	FOCUS	GENTEXTS

INFORM	IPDS	JOCIT
MARK IV (TM)	METRAN	PERLUETTE
PROGRAM GENERAT	SCOPE	STRUCTURIZER
SURGE 72	SYSTEM-80	TAB40
YACC		

. . OPTIMIZATION.....COTUNE II

LILITH	MEMORY MNG LIB	OPTIMUS
OPTIMIZER II	QCM	

APPENDIX D

TOOLS BY STATIC ANALYSIS FEATURES

. . COMPARISON.....CCS

COMPARE	DECKBOY COMPAR	DIFFS (TM)
DRIVER	FADEBUG-I	FASP
MSEF	PROG COMP ANAL	PWB FOR VAX/VMS
SCAN/370	SOFTOOL 80 (TM)	TDBCOMP
TRAILBLAZER	VIRTUAL OS	

. . DATA FLOW ANALYSIS.....ADF

ATDG	AUDIT	CAVS
DARTS	DAVE	DCD
DDPM	FACES	FAST
FAVS	ISUS	PREF HDR GEN
RXVP80 (TM)	SADAT	SARA
SNOOP	SOFTOOL 80 (TM)	SRIMP
SURVAYOR	TOOLPACK	TPT

. . INTERFACE ANALYSIS.....AUTO-DBO

DAVE	FAST	FORAN
INFORM/REFORM	JAVS	PREF HDR GEN
RXVP80 (TM)	SEF	SOFTOOL 80 (TM)
SYDIM		

. . CROSS REFERENCE.....ADS/CERL

AUTOFLOW (TM)	CALLREF	QAVS
CCREF	CICS DUMP ANALY	COBOL/SP
COMGEN/TRW	COMGEN	COMLIST/TRW
COMLIST	COMMAP	COMSORT
CONFIG	CORE	CPA-ADR
CROREF	DA	DAVE
DCD	DDPM	DEPCHT
DICTANL/LOCATE	DPNDCY	FASP
FAVS	FLOBOL	FORAN
FORREF	FORTREF	FTNXREF
GIRAFF	INTERFACE DOCUM	JOYCE
LEXICON	LIBREF	LOGOS
PBASIC	PDL	PSL/PSA
QUICK-DRAW	REFER	REFTRAN (TM)
RISOS TOOLS	RTT	RXVP80 (TM)
SARA	SCAN/370	SCG/DQM

SDL	SDP/MAYDA	SNOOP
STAG/TEMS	STRUCTURE(S)	SUBCRS
SYDOC	SYMCRS	SYSXREF
TAPS/AM	TOOLPACK	VIRTUAL OS

. . COMPLEXITY MEASUREMENT.....DARTS

DDPM	DQM	GOTO-ANALYZER
ISDS	LOGICFLOW	RXVP80 (TM)
SAP/H	SCG/DQM	SCHEMACODE
SOFTOOL 80 (TM)	STAT ENT & EVAL	

. . COMPLETENESS CHECKING.....AUTO-DBO

CADSAT	CONFIGURATOR	MEDL-R
PSL/PSA	PWB FOR VAX/VMS	RA
RXVP80 (TM)	SARA	SIGS
SOFTOOL 80 (TM)	SPECLE/DARS	SREM

. . COST ESTIMATION.....SLIM

SPREAD

. . CONSISTENCY CHECKING.....AFFIRM

ARTS	ASSET	AUTO-DBO
CARA	CONFIGURATOR	DAS
FAST	FORAN	MED-SYS
MEDL-R	MEDL-D	PSL/PSA
RA	RXVP80 (TM)	SARA
SCG/DQM	SREM	SREP
SRIMP		

. . UNITS ANALYSIS.....RXVP80 (TM)

UCA

. . TYPE ANALYSIS.....AFFIRM

FAVS RXVP80 (TM)

. . STATISTICAL ANALYSIS.....ASRP

ATA-FASP	BSC	CAVS
CENSUS	FTN-77 ANALYZER	FTN ANALYZER
JOVIAL/J3SC	NODAL	PET
REL MEAS MODEL	RISOS TOOLS	RXVP80 (TM)
SADAT	SAP	SARA-H
STAT ENT & EVAL	SYDOC	TIMECS

. . AUDITING.....ADS/CERL

AUDITOR	AUDIT	CA
CCA	COBOL/QDM	COBOL STRUCT
COMSCAN	CPA-ADR	DAS
ECA AUTOMATION	ENFORCE	FACES
FCA	GOTO-ANALYZER	HAWKEYE (TM)
JIGSAW	JOVIAL/VS	LOGICFLOW
PBASIC	PET	PFORT
PSL	RADC/FCA	SADAT
SCG/DQM	SOFTOOL 80 (TM)	SPELL
SSA	STRUCT	

. . MANAGEMENT.....ABS

ACT/1	ADA ENVIRONMENT	ALIAS
ARGUS/MICRO	ARTS	ASA-PMS
ASSET	AUTOCOM	AUTOIDEF0
AUTORETEST	BEST/1 (TM)	BLKGEN-BDD
BLKGEN/SPECPN	BUDGET VS ACTUA	CAPTURE/MVS(TM)
CCS	CHECKSUM	COMDIM
COMGEN	COMGEN/TRW	COMLIST
COMSORT	COMSTAR	CONFIG
CPA	CPAL	CRYSTAL (TM)
CS4	DAS	DATA DESIGNER
DDPM	DIRCOM	DOSSIER
DPNDCY	DRIVER	EASYTROL
EVP	FASP	FOCUS
FORMAN	FTNXREF	GIM/GIM II
HARP	INFORM	ISUS
LANG INSTRUCTOR	LIBRARIAN	MEDL-D
MEDL-X	MEDL-R	MEDL-P
MSEF	N5500	N-SQUARED
NETWORK PLANNER	NODAL	ONLINE ASSIST
PAC II	PDS	PDSS
PFS	PMCS	PMS IV
PPP	PROG COMP ANAL	PRONET
PSL	PWB FOR VAX/VMS	QCRT
RXVP80 (TM)	SCG/DQM	SCHEMACODE
SDP	SDVS	SEF
SLIB	SMS	SNOOP
SOFTOOL 80 (TM)	SPC	SPECTRUM-1
SPREAD	SREM	SUS
SYDIM	SYMCRS	TAFIRM
TAPS/AM	TOOLPACK	TOOLS DATABASE
TRAILBLAZER	TRMS	TRWPLT
VIRTUAL OS		

. . . CONFIGURATION MANAGEMENT.....ABS

ADA ENVIRONMENT	ASSET	AUTOIDEF0
BLKGEN/SPECPN	CCS	CHECKSUM
COMGEN	CONFIG	CPAL
GIM/GIM II	ISUS	PROG COMP ANAL
PWB FOR VAX/VMS	SDP	SDVS
SEF	SMS	SOFTOOL 80 (TM)
SUS		

. . . PROJECT MANAGEMENT.....ASA-PMS

BUDGET VS ACTUA	EASYTROL	HARP
N5500	N-SQUARED	NETWORK PLANNER
PAC II	PDSS	PFS
PMCS	PMS IV	PPP
PRONET	SPC	SPECTRUM-1
SPREAD	TRMS	

. . . VERSION CONTROL.....ASSET

BLKGEN/SPECPN	CHECKSUM	LIBRARIAN
MSEF	SDP	SMS

```
. . . TEST DATA MANAGEMENT.......................ABS
              ASSET            AUTORETEST        DRIVER
              MSEF             NODAL             PDS
              SEF              TAFIRM            TRAILBLAZER

. . . LIBRARY MANAGEMENT........................ABS
              ASSET            COMSTAR           CPA
              DOSSIER          LIBRARIAN         PSL
              SEF              SLIB

. . . FILES MANAGEMENT..........................ACT/1
              ARGUS/MICRO      COMSTAR           LIBRARIAN
              PDS              PSL               QCRT
              TAPS/AM          TOOLPACK          VIRTUAL OS

. . . DATA BASE MANAGEMENT......................ARTS
              BLKGEN/SPECPN    CS4               DATA DESIGNER
              FOCUS            GIM/GIM II        INFORM
              MEDL-R           MEDL-P            MEDL-X
              MEDL-D           SREM              TAPS/AM

. . . CHANGE CONTROL............................CCS
              COMLIST          DAS               DDPM
              FTNXREF          ISUS              MSEF
              SCG/DQM          SMS               SPECTRUM-1
              SUS

. . . GLOBAL VARIABLE MANAGEMENT................ALIAS
              AUTOCOM          BLKGEN/SPECPN     BLKGEN-BDD
              COMDIM           COMGEN            COMGEN/TRW
              COMLIST          COMSORT           DIRCOM
              DPNDCY           EVP               FORMAN
              FTNXREF          SEF               SNOOP
              SYDIM            SYMCRS

. . . MANAGEMENT PLANNING.......................TOOLS DATABASE

. . . DOCUMENTATION MANAGEMENT..................ACT/1
              ONLINE ASSIST    SLIB              SPECTRUM-1
              TRWPLT

. . . PERFORMANCE MANAGEMENT....................BEST/1 (TM)
              CAPTURE/MVS(TM)  CRYSTAL (TM)

. . . CAPACITY PLANNING.........................BEST/1 (TM)
              CAPTURE/MVS(TM)

. . TRACKING....................................ARTS
              ASSET            CADSAT            CARA
              DAS              MED-SYS           MEDL-R
              RA               RTT               SLIB
              SREP             STAG/TEMS

. . ERROR CHECKING..............................ADA ENVIRONMENT
              ATDG             AUDITOR           COMMAP
```

FAME	FASP	FAST
FORAN	ISUS	LOGICFLOW
MEFIA	PSL/PSA	RXVP80 (TM)
SFORT-1	SFTRAN3	SRTRAN.BASELINE
STRUCTURE(S)	SYSTEM MONITOR	THE ENGINE

. . SCHEDULING.....SLIM
SPECTRUM-1

. . STRUCTURE CHECKING.....ADF

CAVS	COBOL STRUCT	FAVS
FCA	IFTRAN (TM)	ISDS
ISUS	LOGICFLOW	REFORM
RXVP80 (TM)	SARA	SCAN/370
SDP/MAYDA	SOFTOOL 80 (TM)	STRUCTURING ENG
STRUCTURE(S)	THE ENGINE	TOOLPACK

. . SCANNING.....AFS

ASC	AUTDOC	AUTOFLOW (TM)
AUTOFLOW/TRW	AUTOMATIC DOCUM	CADMUS
CICS DUMP ANALY	CRISPFLOW	DA
DATAMACS	DECA	DOCGEN
DOCU/TEXT	DOCUMENTER A	DOCUMENT
DOCUMENTER	DOCUMENTOR	DQM
ESAP	FLOBOL	FLODIA
FLOWGEN	FORTREF	GADTR AID
INFORM/REFORM	IORL	JET
JSDD	LAYOUT	LIBRARIAN
LOGIFLOW	MPS	MTR
NUMBER	PDS FLOW	PIDGIN-FASP
PROGLOOK	QUICK-DRAW	REFER
RENAME	RXVP80 (TM)	S-FORTRAN
SARA	SCG	SDDL
SDP/MAYDA	SOFTOOL 80 (TM)	SPEAR
SPECLE/DARS	SPELL	STRUCTURE(S)
SYDOC	THE ENGINE	UCA
UF		

. . I/O SPECIFICATION ANALYSIS.....COBOL/DV

DATAMACS	FADEBUG-I	GENTESTS
PREF HDR GEN		

APPENDIX E

TOOLS BY DYNAMIC ANALYSIS FEATURES

. . COVERAGE ANALYSIS.....ARGUS/MICRO

ASSIST-I	ATA-FASP	ATA-SAI
ATTEST	CADA	CAVS
CGJA	COBOL TESTING	COTUNE II
DYNA	EAVS	FASP
FAVS	FORTRAN TESTING	FTN-77 ANALYZER
FTN ANALYZER	IFTRAN (TM)	ITB
JAVS	JIGSAW	JOVIAL TCA
LOGIC	NODAL	PACE
PACE-C	PDS	PET
RXVP80 (TM)	SADAT	SOFTOOL 80 (TM)
TATTLE	TCAT	TDEM
TEST PREDICTOR	TFA	THE ENGINE
TOOLPACK	TPT	TRAILBLAZER

. . ASSERTION CHECKING.....AFFIRM

ATA-SAI	CAVS	EFFIGY
FTN-77 ANALYZER	IFTRAN (TM)	IPDS
RXVP80 (TM)	SELECT	

. . SYMBOLIC EXECUTION.....AMPIC

ASSIST-I	ATTEST	CASEGEN
EFFIGY	NASA-VATS	RXVP80 (TM)
SADAT	SELECT	TEVERE-1

. . SIMULATION.....AISIM

BEST/1 (TM)	CONFIGURATOR	CRYSTAL (TM)
DARTS	DDPM	DPAD
HARDWARE SIMULA	MEDL-P	PERCAM
POD	SALSIM	SARA
SCAN/370	SCERT	SDVS
SLIM	SREM	TAPS/AM

. . TUNING.....CAVS

COBOL OPTIMIZ	CUE	FASP
FAVS	FORTRAN OPTIMIZ	FTN-77 ANALYZER
FTN ANALYZER	IFTRAN (TM)	INSERT
JAVS	MONITOR	NODAL
POD	PROGLOOK	QCM

```
                    RXVP80 (TM)       SADAT             SARA-H
                    SARA-U            SARA-IV           SARA-III
                    SCAN/370          SMT               SOFTOOL 80 (TM)
                    SPRINT            SYSTEM MONITOR    TIMECS
                    TSA/PPE

. . RESOURCE UTILIZATION                        .........BEST/1 (TM)
                    CAPTURE/MVS(TM)   CUE               DARTS
                    DDPM              HARDWARE SIMULA   LOOK
                    PPE               PRONET            QCM
                    REFLECT II        SARA-H            SARA-IV
                    SARA-III          SARA-U            SMT
                    TSA/PPE

. . TIMING.......................................CADA
                    COBOL/ADE         COTUNE II         DARTS
                    DDPM              FASP              HARDWARE SIMULA
                    LOGIC             MONITOR           PPE
                    PROGLOOK          REFLECT II        SMT
                    SOFTOOL 80 (TM)   SPRINT            TFA
                    TIMECS            TIMER

  TRACING........................................ADS
                    ASSIST-I          ATA-FASP          ATA-SAI
                    COBOL/DV          COBOL TRACING     COBOL/ADE
                    EAVS              EFFIGY            EXPEDITER
                    FORTRAN TRACING   FTN-77 ANALYZER   IFTRAN (TM)
                    INSERT            INSTRU            ITB
                    JAVS              LOGIC             MONITOR
                    RXVP80 (TM)       SADAT             SCAN/370
                    SELECT            SOFTOOL 80 (TM)   TAFIRM
                    THE ENGINE        TOOLPACK          TPT
                    TRAILBLAZER       XPEDITER

    BREAKPOINT CONTROL.........................ADS
                    EFFIGY

. . . PATH FLOW TRACING.........................COBOL TRACING
                    EAVS              FORTRAN TRACING   INSERT
                    INSTRU            JAVS              LOGIC
                    MONITOR           SADAT             SCAN/370
                    SELECT            TAFIRM            TRAILBLAZER

    DATA FLOW TRACING..........................INSTRU

. . . LOGIC FLOW TRACING........................ASSIST-I
                    INSTRU

. . REGRESSION TESTING..........................AUTORETEST
                    DATAMACS          DRIVER            EXPEDITER
                    SEF               XPEDITER

  CONSTRAINT EVALUATION........................ATDG
                    RXVP80 (TM)       TEST PREDICTOR
```

APPENDIX F

TOOLS BY USER OUTPUT

. . DIAGNOSTICS.....ADA ENVIRONMENT

ADS	AFFIRM	ARGUS/MICRO
ASSET	ATDG	AUDITOR
AUDIT	BEST/1 (TM)	CA
CARA	CAVS	CCA
CHECKSUM	CICS DUMP ANALY	COBOL/CP
COBOL/ADE	COBOL/QDM	COGENT
COMMAP	COMSCAN	CORE
CPA-ADR	CRYSTAL (TM)	DAVE
DDPM	DECA	EAVS
ENFORCE	FACES	FAME
FASP	FAST	FAVS
FCA	FOCUS	FORAN
FTNXREF	GIRAFF	GOTO-ANALYZER
HAWKEYE (TM)	IFTRAN (TM)	INFORM
INSERT	IPDS	ISUS
JAVS	JIGSAW	JOCIT
JOVIAL/J3SC	JOVIAL/VS	JOVIAL TCA
MARK IV (TM)	MED-SYS	NASA-VATS
PBASIC	PET	PFORT
PREF HDR GEN	PSL/PSA	PWB FOR VAX/VMS
RADC/FCA	RXVP80 (TM)	S-FORTRAN
SADAT	SCAN/370	SFORT-1
SFTRAN3	SNOOP	SOFTOOL 80 (TM)
SPELL	SREM	SRTRAN BASELINE
SSA	STRUCT	SURVAYOR
SYDOC	SYSTEM MONITOR	TOOLPACK
TPT	TRANSFOR	TSA/PPE
UCA	VIRTUAL OS	

. . USER-ORIENTED TEXT.....ACT/1

ADS/CERL	ARGUS/MICRO	ASC
ATTEST	AUTDOC	AUTO-DBO
AUTOIDEF0	AUTOMATIC DOCUM	CADMUS
CARA	CAVS	COBOL/DV
COMSORT	CROREF	CS4
DA	DAS	DCD
DECA	DEPCHT	DICTANL/LOCATE
DOCGEN	DOCU/TEXT	DOCUMENTER A

DOCUMENT	DOCUMENTER	DOCUMENTOR
DOSSIER	EASYTROL	ECA AUTOMATION
ESAP	FAVS	FTNXREF
GIM/GIM II	INFORM/REFORM	IORL
LANG INSTRUCTOR	MEDL-D	MEDL-X
MEDL-R	MPS	ONLINE ASSIST
PDL	PSL	RA
SARA	SCG/DQM	SDP/MAYDA
SEF	SIGS	SLIB
SNOOP	SOFTOOL 80 (TM)	SPECTRUM-1
SREM	SREP	TAPS/AM
VIRTUAL OS		

REPORTS.....CADMUS

DA	DAS	DOCGEN
DOCU/TEXT	DOCUMENTOR	DOCUMENT
DOSSIER	EASYTROL	GIM/GIM II
IORL	MEDL-X	MEDL-D
MEDL-R	MPS	PDL
PSL	RA	SCG/DQM
SEF	SLIB	SPECTRUM-1
SREM		

. . DOCUMENTATION ACT/1

ADS/CERL	ASC	ATTEST
AUTDOC	AUTO-DBO	AUTOIDEF0
AUTOMATIC DOCUM	CADMUS	CARA
CAVS	COBOL/DV	COMSORT
CROREF	CS4	DCD
DECA	DEPCHT	DICTANL/LOCATE
DOCGEN	DOCUMENTER A	DOCUMENTOR
DOCUMENTER	ECA AUTOMATION	ESAP
FAVS	FTNXREF	INFORM/REFORM
ONLINE ASSIST	PSL	SARA
SCG/DQM	SDP/MAYDA	SEF
SIGS	SNOOP	SOFTOOL 80 (TM)
SREP	TAPS/AM	

. . GRAPHICS .....ADF

AFS	AISIM	AMPIC
ARGUS/MICRO	ASC	AUTDOC
AUTOFLOW/TRW	AUTOFLOW (TM)	AUTOIDEF0
BUDGET VS ACTUA	CADSAT	CAPTURE/MVS(TM)
CONFIGURATOR	COTUNE II	CRISPFLOW
CRYSTAL (TM)	DA	DARTS
DATA DESIGNER	DCD	DI-3000
DQM	ESAP	FAME
FLOBOL	FLODIA	FLOWGEN
FOCUS	FOSTRA	GADTR AID
GRAFMAKER	HARP	IFTRAN (TM)
INFORM	JOYCE	JSDD
LAYOUT	LILITH	LOGICFLOW
LOGIFLOW	LOOK	MARK IV (TM)
MTR	N-SQUARED	NETWORK PLANNER
PDS FLOW	PDSS	PIDGIN-FASP

POD	PPP	PROGLOOK
PRONET	PSL/PSA	QUICK-DRAW
RISOS TOOLS	RTT	RXVP80 (TM)
SARA	SARA-U	SARA-H
SCAN/370	SCG	SDP/MAYDA
SIGS	SLIM	SNOOP
SPEAR	SPECLE/DARS	SPECTRUM-1
SREM	SRIMP	STRUCTURE(S)
SYDOC	TIMER	TRWPLT
UF		

FLOW CHARTS.....AFS

AMPIC	AUTDOC	AUTOFLOW/TRW
CRISPFLOW	DCD	ESAP
FLOBOL	FLODIA	FLOWGEN
JOYCE	JSDD	LOGICFLOW
LOGIFLOW	PDS FLOW	QUICK-DRAW
RISOS TOOLS	SNOOP	SPEAR
UF		

. . . HIPO CHARTS.....SNOOP

BAR CHARTS.....SLIM

. . . LINE GRAPHS SLIM

. . . STRUCTURE CHARTS SCG

. . . DESIGN CHARTS.....DATA DESIGNER

DQM	GADTR AID	HARP
LOGICFLOW	SPECLE/DARS	STRUCTURE(S)

. . . HIERARCHICAL TREE.....DARTS

FAME	GADTR AID	RTT
SCAN/370	SDP/MAYDA	SRIMP
SYDOC		

. . . CONTROL MAP .....FAME

. . . ACTIVITY DIAGRAM.....BUDGET VS ACTUA

PRONET	SARA-H	SRIMP

. . . CHARTS.....ASC

CAPTURE/MVS(TM)

. . . HISTOGRAMS.....COTUNE II

. . . MILESTONE CHARTS.....N-SQUARED

ACTIVITY DIAGRAMS.....PROGLOOK

. . . HIERARCHICAL TREES.....GADTR AID

TABLES.....ADS/CERL

AISIM	ARGUS/MICRO	ARTS

ASA-PMS	ATA-FASP	ATA-SAI
ATDG	BEST/1 (TM)	BSC
CALLREF	CAPTURE/MVS(TM)	CAVS
CCREF	CENSUS	CGJA
CICS DUMP ANALY	COBOL TRACING	COBOL TESTING
COBOL STRUCT	COBOL/DV	COBOL/SP
COBOL OPTIMIZ	COMGEN	COMLIST
COMLIST/TRW	COMMAP	COMSORT
CONFIG	CPA-ADR	CROREF
CRYSTAL (TM)	CUE	DA
DARTS	DATA DESIGNER	DATAMACS
DCD	DDPM	DEPCHT
DICTANL/LOCATE	DPAD	DPNDCY
DQM	DYNA	EXPEDITER
FAVS	FLOBOL	FOCUS
FORAN	FORREF	FORTRAN TRACING
FORTRAN OPTIMIZ	FORTREF	FORTRAN TESTING
FTN-77 ANALYZER	FTN ANALYZER	FTNXREF
GIM/GIM II	GIRAFF	GOTO-ANALYZER
INFORM	INSERT	INSTRU
INTERFACE DOCUM	ITB	JAVS
JIGSAW	JOVIAL/J3SC	JOVIAL TCA
JOYCE	LEXICON	LIBRARIAN
LIBREF	LOGIC	LOGOS
LOOK	MARK IV (TM)	MEDL-R
MEDL-D	MENTOR	MONITOR
N5500	NODAL	PAC II
PBASIC	PDL	PDSS
PERCAM	PET	PFS
PMCS	PMS IV	POD
PROGLOOK	PRONET	PSL/PSA
PWB FOR VAX/VMS	QCM	QCRT
QUICK-DRAW	REFER	REFLECT II
REFTRAN (TM)	REL MEAS MODEL	RISOS TOOLS
RTT	RXVP80 (TM)	SADAT
SALSIM	SAP	SAP/H
SARA-III	SARA-U	SARA-H
SARA-IV	SCAN/370	SCERT
SCG/DQM	SDP	SDVS
SLIM	SMT	SNOOP
SOFTOOL 80 (TM)	SPC	SPREAD
SPRINT	STAG/TEMS	STAT ENT & EVAL
STRUCT	SUBCRS	SUS
SYDIM	SYDOC	SYMCRS
SYSXREF	TAFIRM	TATTLE
TCAT	TDEM	TEST PREDICTOR
TFA	TIMECS	TIMER
TOOLPACK	TOOLS DATABASE	TPT
TRAILBLAZER	TRMS	XPEDITER

LISTINGS.....ABS

ACT/1	ADA COMPILER	ADA ENVIRONMENT
ADF	AFFIRM	ALIAS
AMPIC	ARGUS/MICRO	ASA-PMS
ASC	ASEQ	ASRP

ASSET	ASSIST-I	ATA-FASP
ATA-SAI	ATDG	ATTEST
AUDIT	AUDITOR	AUTOCOM
AUTOFLOW (TM)	AUTOFLOW/TRW	AUTOMATIC DOCUM
AUTORETEST	BLKGEN-BDD	BSC
CA	CADA	CADSAT
CALLREF	CASEGEN	CBLSHORT
CCA	CCREF	CCS
CGJA	COBOL OPTIMIZ	COBOL TESTING
COBOL STRUCT	COBOL/QDM	COBOL TRACING
COGENT	COMGEN/TRW	COMLIST
COMLIST/TRW	COMPARE	CONFIG
COPE (TM)	CORE	COTUNE II
CPAL	CQD	CS4
CTC	DA	DECKBOY COMPAR
DIFFS (TM)	DIRCOM	DRIVER
DYNA	EAVS	EFFIGY
ENFORCE	EVP	EXPEDITER
FADEBUG-I	FASP	FCA
FORMAN	FORTRAN OPTIMIZ	FORTRAN TRACING
FORTRAN TESTING	FTN-77 ANALYZER	FTN ANALYZER
FTNCODER	GENTEXTS	HARDWARE SIMULA
HAWKEYE (TM)	IFTRAN (TM)	INSERT
INSTRU	IPDS	ISDS
ISUS	ITB	JAVS
JET	JIGSAW	JOCIT
JOVIAL TCA	LILITH	LOGICFLOW
LOGIC	LOGOS	MED-SYS
MEFIA	MENTOR	MODULE ORDERER
MONITOR	MSEF	MSL
NASA-VATS	NODAL	NUMBER/DEC
NUMBER	PACE-C	PACE
PBASIC	PDS	PET
PFORT	PIDGIN-FASP	PPE
PREF HDR GEN	PROG COMP ANAL	PSL/PSA
QUIKCODE	RADC/FCA	REALIGNMENT SYS
REFORM	REFTRAN (TM)	RENAME
RTT	RXVP80 (TM)	SADAT
SALSIM	SARA	SCAN/370
SCHEMACODE	SCOBOL (TM)	SDDL
SDL	SDP	SDP/MAYDA
SDVS	SELECT	SFORT-1
SFTRAN3	SOFTOOL 80 (TM)	SPECLE/DARS
SPELL	SREM	SRIMP
SRTRAN.BASELINE	STRUCTURIZER	SURVAYOR
SUS	SYDOC	SYMCRS
SYSTEM MONITOR	SYSXREF	TAB40
TAFIRM	TATTLE	TDBCOMP
TDEM	TEST PREDICTOR	TEVERE-1
TFA	THE ENGINE	TIDY
TOOLPACK	TPT	TRAILBLAZER
TSA/PPE	UCA	UCSD P-SYSTEM
VIRTUAL OS	XPEDITER	

APPENDIX G

TOOLS BY MACHINE OUTPUT

. . SOURCE CODE OUTPUT.....ADA-ATOM

ASSIST-I	ATA-FASP	ATA-SAI
BLKGEN/SPECPN	CADA	CAVS
CBLSHORT	CGJA	COBOL/CP
COBOL TESTING	COBOL OPTIMIZ	COBOL/SPP
COBOL TRACING	COBOL/SP	COGENT
COMGEN	COMGEN/TRW	COPE (TM)
CPA	CPAL	CQD
CSPP	CTC	DYNA
EAVS	ENFORCE	FASP
FAVS	FORTRAN TRACING	FORTRAN TESTING
FORTRAN OPTIMIZ	FOSTRA	FTN-77 ANALYZER
FTN ANALYZER	FTNCODER	GENTEXTS
GENTESTS	HAWKEYE (TM)	IFTRAN (TM)
INSERT	INSTRU	IPDS
ISUS	ITB	JAVS
JIGSAW	JOVIAL TCA	LOGIC
LOGICFLOW	MEFIA	MEMORY MNG LIB
MENTOR	METRAN	NODAL
NUMBER	NUMBER/DEC	OSCYBR
PACE	PACE-C	PDS
PERLUETTE	PET	PROGRAM GENERAT
QUIKCODE	RATCODER	RATFOR
REALIGNMENT SYS	REFORM	RENAME
RXVP80 (TM)	S-FORTRAN	SARA
SCHEMACODE	SCOBOL (TM)	SCOPE
SFORT-1	SFTRAN3	SLIB
SMAL/80	SMS	SOFTOOL 80 (TM)
SPTRAN	SRTRAN.BASELINE	STRUCTURING ENG
STRUC1/STRUC2	STRUCTURIZER	SURGE 72
SYSTEM-80	TAB40	TATTLE
TCAT	TDEM	TEST PREDICTOR
TFA	THE ENGINE	TOOLPACK
TPT	TRAILBLAZER	TRANSFOR
VIRTUAL OS	X TO Y TRANS PK	YACC

. . . BASIC.....MEFIA

. . . FORTRAN ATA-SAI

COMGEN	CPAL	DYNA
EAVS	FAVS	FORTRAN TESTING
FORTRAN OPTIMIZ	FORTRAN TRACING	FTN ANALYZER
FTNCODER	IFTRAN (TM)	INSERT
INSTRU	ISUS	ITB
LOGICFLOW	LOGIC	MEMORY MNG LIB
NODAL	NUMBER	OSCYBR
PACE	PDS	PET
RATFOR	REFORM	RENAME
RXVP80 (TM)	SCHEMACODE	SFORT-1
SFTRAN3	SPTRAN	SRTRAN.BASELINE
STRUC1/STRUC2	STRUCTURING ENG	TAB40
TDEM	TEST PREDICTOR	TOOLPACK
TPT	TRAILBLAZER	TRANSFOR
VIRTUAL OS	X TO Y TRANS PK	

. . . COBOL.....CADA

CAVS	CBLSHORT	COBOL/CP
COBOL/SPP	COBOL TRACING	COBOL OPTIMIZ
COBOL/SP	COBOL TESTING	COPE (TM)
CPA	CQD	CSPP
CTC	ENFORCE	HAWKEYE (TM)
NUMBER/DEC	QUIKCODE	REALIGNMENT SYS
SCOBOL (TM)	SURGE 72	SYSTEM-80
TAB40	TCAT	TFA
THE ENGINE	TRAILBLAZER	

. . . COMPASS.....PACE-C

. . . PL/1.....MEFIA
TRAILBLAZER

. . . JOVIAL.....CGJA

EAVS	JAVS	JIGSAW
JOVIAL TCA	LOGICFLOW	TATTLE

. IFTRAN.....RXVP80 (TM)

. . . SMAL/80.....SMAL/80

. . . RATFOR.....RATCODER

. . ALGOL.....TAB40

. . . SRTRAN.....ISUS
ITB

SFTRAN.....FOSTRA

. . . SIMULA.....GENTEXTS

ATOM.....ADA-ATOM

. . . CMS-2.....ATA-FASP

. . ASSEMBLY LANGUAGE.....MAGLE

. . OBJECT CODE OUTPUT

		CS4
FASP	LILITH	MSEF
OPTIMIZER II	OPTIMUS	PWB FOR VAX/VMS
SMMA	XAS8	

. . DATA OUTPUT.....CARA

CASEGEN	CGJA	CHECKSUM
COBOL/DV	COGENT	COMSTAR
CS4	INFORM	MARK IV (TM)
MENTOR	PSL/PSA	PWB FOR VAX/VMS
RTT	SARA	TOOLPACK

. . PROMPTS.....SARA

. . VHLL OUTPUT.....AUTO-DBO

SRIMP

. . INTERMEDIATE CODE.....ADA COMPILER

CHILL TRANS	JOCIT	MSEF

APPENDIX H

PORTABLE TOOLS

FULLY PORTABLE

ADF	ARGUS/MICRO	ASA-PMS	AUDITOR
BEST/1 (TM)	CAPTURE/MVS(TM)	CAVS	CBLSHORT
COBOL TESTING	COBOL/CP	COBOL TRACING	COBOL OPTIMIZ
COMMAP	COPE (TM)	CSPP	DAVE
DECKBOY COMPAR	DI-3000	DIFFS (TM)	DOCUMENTER A
DYNA	ENFORCE	EXPEDITER	FORTRAN OPTIMIZ
FORTRAN TRACING	FORTRAN TESTING	FTN-77 ANALYZER	FTN ANALYZER
GOTO-ANALYZER	GRAFMAKER	HAWKEYE (TM)	IFTRAN (TM)
INTERFACE DOCUM	ISUS	ITB	MAGLE
MEMORY MNG LIB	METRAN	N5500	NODAL
ONLINE ASSIST	PBASIC	PET	POD
PRONET	PSL/PSA	RATFOR	REFTRAN (TM)
REL MEAS MODEL	RXVP80 (TM)	SCOBOL (TM)	SDDL
SDP/MAYDA	SFTRAN3	SLIM	SOFTOOL 80 (TM)
SPTRAN	SREM	SRIMP	SRTRAN.BASELINE
STRUCTURIZER	TAB40	TAPS/AM	THE ENGINE
TOOLPACK	TRAILBLAZER	UCSD P-SYSTEM	VIRTUAL OS
X TO Y TRANS PK			

PARTIALLY PORTABLE

AISIM	ARTS	DQM	PWB FOR VAX/VMS
SCG	STRUCTURE(S)		

APPENDIX I

TOOLS BY SOURCE LANGUAGE

BASIC

CRISPFLOW	DOCUMENTER	HARDWARE SIMULA	MEFIA
PROGRAM GENERAT	SLIB	SLIB	SLIM
STAT ENT & EVAL			

FORTRAN

ABS	ADA COMPILER	ADS/CERL	AFS
AISIM	ALIAS	ARTS	ASA-PMS
ASEQ	ASRP	ATA-SAI	ATDG
ATTEST	AUDIT	AUDITOR	AUTDOC
AUTOCOM	AUTOFLOW/TRW	AUTOIDEF0	AUTOMATIC DOCUM
AUTORETEST	BLKGEN/SPECPN	BLKGEN-BDD	BUDGET VS ACTUA
CA	CADMUS	CADSAT	CALLREF
CARA	CASEGEN	CCA	CCREF
CENSUS	CHECKSUM	CHILL TRANS	COBOL OPTIMIZ
COBOL TRACING	COMDIM	COMGEN/TRW	COMGEN
COMLIST/TRW	COMLIST	COMMAP	COMPARE
COMSCAN	COMSORT	COMSTAR	CONFIG
CONFIGURATOR	CPAL	CRISPFLOW	CROREF
CS4	DAS	DATA DESIGNER	DAVE
DECA	DECKBOY COMPAR	DEPCHT	DI-3000
DICTANL/LOCATE	DIRCOM	DOCGEN	DOCUMENTER A
DOCUMENTOR	DPAD	DPNDCY	DQM
DRIVER	DYNA	ESAP	EVP
FACES	FASP	FAST	FCA
FLODIA	FLOWGEN	FOCUS	FORAN
FORMAN	FORREF	FORTRAN OPTIMIZ	FORTRAN TESTING
FORTRAN TRACING	FORTREF	FOSTRA	FTN-77 ANALYZER
FTN ANALYZER	GIRAFF	GOTO-ANALYZER	GRAFMAKER
HARP	IFTRAN (TM)	INFORM/REFORM	INSTRU
INTERFACE DOCUM	JIGSAW	JOYCE	LANG INSTRUCTOR
LOGIC	LOGICFLOW	LOGIFLOW	MAGLE
MED-SYS	MEDL-R	MEDL-D	MEMORY MNG LIB
METRAN	MODULE ORDERER	MTR	N-SQUARED
NETWORK PLANNER	NODAL	NUMBER	ONLINE ASSIST
OSCYBR	PACE	PACE-C	PDS
PDS FLOW	PDSS	PERCAM	PET
PFORT	PFS	PMCS	POD

PREF HDR GEN	PROG COMP ANAL	PROGLOOK	PSL/PSA
RADC/FCA	RATFOR	REFER	REFORM
REFTRAN (TM)	RENAME	RISOS TOOLS	RXVP80 (TM)
SALSIM	SARA-IV	SARA-H	SARA-U
SARA-III	SCG	SCG/DQM	SCHEMACODE
SDP	SDP/MAYDA	SDVS	SFORT-1
SFTRAN3	SIGS	SLIM	SOFTOOL 80 (TM)
SPELL	SPREAD	SPRINT	SPTRAN
SREM	SRIMP	SRTRAN.BASELINE	STRUCTURIZER
STRUCT	SUBCRS	SURVAYOR	SUS
SYMCRS	TAB40	TDEM	TEST PREDICTOR
TIDY	TIMER	TOOLPACK	TPT
TRAILBLAZER	TRANSFOR	TRWPLT	TSA/PPE
UCA	VIRTUAL OS	X TO Y TRANS PK	

MACRO-11

IORL

COBOL

ADF	CADA	CAVS	CBLSHORT
COBOL/SP	COBOL/SPP	COBOL STRUCT	COBOL/QDM
COBOL TESTING	COBOL/DV	COMSCAN	COPE (TM)
COTUNE II	CPA	CQD	CSPP
CTC	CUE	DCD	DIFFS (TM)
DOCU/TEXT	EASYTROL	ENFORCE	FLOBOL
HAWKEYE (TM)	LIBREF	N5500	NUMBER/DEC
PAC II	PPE	PSL	QCRT
QUICK-DRAW	QUIKCODE	REALIGNMENT SYS	SCAN/370
SCERT	SCOBOL (TM)	SCOPE	SDVS
SNOOP	STRUCTURE(S)	SURGE 72	SYDIM
TFA	THE ENGINE	TIMECS	TRMS

PASCAL

ARGUS/MICRO	AUTO-DBO	FAME	FTNCODER
FTNXREF	GENTESTS	GENTEXTS	MENTOR
NASA-VATS	RATCODER	SDDL	SREM
SREP	SYSXREF	TOOLS DATABASE	UCSD P-SYSTEM
UF	VIRTUAL OS		

ASSEMBLY

ASSIST-I	AUTOFLOW (TM)	AUTORETEST	CORE
CUE	FADEBUG-I	INFORM	LIBRARIAN
LOGIFLOW	MARK IV (TM)	OPTIMUS	OPTIMIZER II
PMS IV	PPE	PROGLOOK	QCM
REFLECT II	SDVS	SMAL/80	SMMA
SMT	SYDOC	TSA/PPE	

COMPASS

ABS	COMSTAR	FASP	MPS
PACE-C	PMCS	TIMECS	

PL/1

BSC	DARTS	EFFIGY	GENTEXTS
JET	MEFIA	PPP	SADAT
SARA	SPEAR	SRIMP	SSA
STRUCTURING ENG	TPT		

JOVIAL

CGJA	JAVS	JOVIAL/J3SC	JOVIAL/VS
JOVIAL TCA	JSDD	SDVS	TAFIRM
TATTLE	TDBCOMP		

IFTRAN

EAVS	ISDS

SLEUTH

CADMUS	CROREF	DEPCHT	FORREF

PWS

GIM/GIM II

OBJECT

GIM/GIM II	QUICK-DRAW

STRUCTURED FORTRAN

DOCUMENT	FAVS	FOSTRA	LEXICON
LOGOS	PDL	S-FORTRAN	SAP
SAP/H	SFTRAN3	STRUC1/STRUC2	

BAL

CALLREF	COMSCAN	DA	DATAMACS
DOSSIER	EXPEDITER		

RPG

DOCU/TEXT	SPC

SMAL/80

SMAL/80

SIMSCRIPT

AISIM	DAS

RATFOR

INSERT	MONITOR	VIRTUAL OS

SNOBAL

AMPIC

SALSIM

DPAD

LISP

AFFIRM SELECT TEVERE-1

ALC

COTUNE II SCAN/370

C

MSEF ONLINE ASSIST PWB FOR VAX/VMS XAS8
YACC

PLS

DDPM

GIM

STAG/TEMS

SYMPL

JOCIT

PFORT

PBASIC

SRTRAN

ISUS ITB

MODULA

LILITH

SIMULA

GENTEXTS

SCOBOL

DIFFS (TM) SCOBOL (TM)

KCL

FASP

APPENDIX J

TOOLS BY HARDWARE

IBM 360/370

ACT/1	ADS	ALIAS	AMPIC
ARTS	AUTOFLOW/TRW	AUTORETEST	BLKGEN-BDD
CALLREF	CAPTURE/MVS(TM)	CGJA	CHECKSUM
CICS DUMP ANALY	COBOL/ADE	COBOL/SPP	COMDIM
COMGEN	COMLIST	COMLIST/TRW	COMSCAN
CONFIG	CORE	COTUNE II	CPA
CPA-ADR	CS4	CTC	CUE
DA	DARTS	DATA DESIGNER	DATAMACS
DCD	DECA	DIRCOM	DOCU/TEXT
DOCUMENTOR	DOSSIER	EASYTROL	EAVS
EFFIGY	EVP	FACES	FAME
FLOBOL	FOCUS	FORMAN	FORTREF
GADTR AID	GENTESTS	GIM/GIM II	JET
JIGSAW	LAYOUT	LIBRARIAN	LOGICFLOW
LOOK	NODAL	NUMBER	OPTIMUS
OPTIMIZER II	OSCYBR	PAC II	PDL
PDS	PMS IV	PPE	PPP
PROGLOOK	QCM	QCRT	QUICK-DRAW
REFER	REFLECT II	RENAME	S-FORTRAN
SADAT	SALSIM	SARA-IV	SARA-III
SCAN/370	SCERT	SCHEMACODE	SCOPE
SDP	SFORT-1	SMT	SPEAR
SPECLE/DARS	SSA	STAG/TEMS	STRUCTURE(S)
STRUCTURING ENG	SUBCRS	SURVAYOR	SYDIM
SYDOC	TCAT	TIDY	TIMER
TPT	TRMS	TSA/PPE	UF
XPEDITER			

DECSYSTEM-10/20

AFFIRM	ATA-SAI	CS4	JOVIAL TCA
MENTOR	NODAL	PDL	RTT
SDVS	SLIM	TOOLS DATABASE	

DATA GENERAL

MODULE ORDERER

BURROUGHS B3500

PAC II

SEL 32

PDL S-FORTRAN

DEC PDP-11

DOCUMENTER	FOSTRA	HARDWARE SIMULA	INFORM
LIBREF	MED-SYS	MEDL-R	MSEF
NUMBER/DEC	ONLINE ASSIST	PDL	PWB FOR VAX/VMS
QUIKCODE	RA	SAP	SAP/H
SCG/DQM	SLIB	TEVERE-1	XAS8
YACC			

BURROUGHS B6700

TEVERE-1

TSS

GIRAFF

TI

SREP

INTEL 8080/8085

SMAL/80 XAS8

MODCOMP

PREF HDR GEN PROG COMP ANAL SMMA

IBM 3033

CADSAT SADAT

NO. 1 ESS

CCS

FACOM 230-60

FADEBUG-I

AMDAHL 470

AISIM	DDPM	DQM	QCM
SARA-IV	SARA-III	SCG	SCG/DQM

ONYX

PWB FOR VAX/VMS

APPLE II

AUTO-DBO

LILITH

LILITH

CDC CYBER

AFS	ATA-FASP	AUTOIDEF0	AUTOMATIC DOCUM
CADA	DAS	FAME	FASP
FTNXREF	MPS	PDS	PIDGIN-FASP
PMCS	SIGS	SYSXREF	TFA

DEC/GT4X

IORL

CDC 6X00/7X00

ABS	ADS/CERL	ARTS	ASEQ
ATA-FASP	AUDIT	AUTOCOM	AUTOIDEF0
BLKGEN-BDD	BUDGET VS ACTUA	CA	CADMUS
CCA	COMDIM	COMGEN/TRW	COMSORT
COMSTAR	CPAL	DICTANL/LOCATE	DIRCOM
DOCUMENTOR	DPAD	DRIVER	ESAP
FASP	FLOBOL	FLODIA	FLOWGEN
FORAN	FORTREF	FTNCODER	FTNXREF
GADTR AID	GIRAFF	INFORM/REFORM	INSERT
JAVS	JIGSAW	JOYCE	LOGIC
LOGIFLOW	MONITOR	MPS	N-SQUARED
NASA-VATS	NODAL	PACE-C	PACE
PDL	PDS FLOW	PDSS	PERCAM
PFS	PIDGIN-FASP	PMCS	RATCODER
REFORM	RENAME	RISOS TOOLS	S-FORTRAN
SALSIM	SIGS	SPELL	SPREAD
SPRINT	SREP	STRUCT	SUBCRS
SURVAYOR	SYMCRS	SYSXREF	TEST PREDICTOR
TIDY	UCA	UF	

XDS SIGMA X

ASSIST-I	GIRAFF

UNIVAC 11XX

ARTS	ATDG	AUTDOC	BLKGEN/SPECPN
CCREF	CENSUS	COBOL STRUCT	COMGEN
COMPARE	CRISPFLOW	CROREF	CS4
DATA DESIGNER	DEPCHT	DOCGEN	DOCUMENT

DPNDCY	FLOBOL	FORREF	FORTREF
GIM/GIM II	JIGSAW	LEXICON	LOGOS
NODAL	ONLINE ASSIST	PAC II	PACE
PDL	PDS	QUICK-DRAW	REALIGNMENT SYS
S-FORTRAN	SARA-U	SNOOP	STAG/TEMS
STRUCTURE(S)	TCAT	TDEM	TRWPLT

HONEYWELL 6XXX

ASRP	BSC	CARA	COBOL/SPP
EASYTROL	FAVS	FCA	FLOBOL
FORTREF	INSTRU	JOCIT	JOVIAL/J3SC
JSDD	PSL	QCRT	QUICK-DRAW
RADC/FCA	SARA-H	SARA	STRUC1/STRUC2
STRUCTURE(S)			

CDC 3XXX

TAFIRM	TATTLE	TDBCOMP	TIMECS

HONEYWELL 6XX

FCA	FLOBOL	FORTREF	ISDS
JAVS			

EC

TPT

DEC VAX-11

ARTS	ATTEST	CS4	FAME
INFORM	MEDL-D	MEDL-R	MENTOR
PWB FOR VAX/VMS	SCG	SDDL	SLIB

IBM SYSTEM 3

SPC

HP 85

PROGRAM GENERAT	SLIM

CII-HB

GENTESTS	GENTEXTS	MEFIA	MENTOR
PERLUETTE			

PLESSEY MICRO I

MEFIA

APPENDIX K

TOOLS BY SOFTWARE

OS

ADS	CICS DUMP ANALY	COBOL/ADE	CORE
CPA-ADR	CTC	CUE	DA
DOCU/TEXT	EASYTROL	FOCUS	JET
PMS IV	PROGLOOK	QCM	QCRT
SARA-III	SARA-IV	SCERT	SYDIM
TAPS/AM	TRMS	TSA/PPE	

SVS

CICS DUMP ANALY	FOCUS	LOOK	REFLECT II
SYDOC			

VM/CMS

EFFIGY	FAME	FOCUS

TSO

CS4	DAS	DDPM	FOCUS
SCG/DQM			

RT-11

IORL

OS/VS

ACT/1	ADS	CADSAT	CICS DUMP ANALY
COBOL/ADE	CORE	CUE	DA
DOCU/TEXT	FOCUS	LOOK	PMS IV
PROGLOOK	QCM	QCRT	REFLECT II
SARA-IV	SARA-III	SCAN/370	SCERT
SCOPE	SMT	SSA	STRUCTURE(S)
SYDOC	TAPS/AM	TRMS	TSA/PPE

DOS

ADS	CICS DUMP ANALY	CORE	CPA-ADR

CTC	DA	DOSSIER	EASYTROL
OPTIMUS	QCRT	TAPS/AM	

DOS/VS

ADS	CORE	CPA	DA
DOSSIER	OPTIMUS	SCAN/370	SCOPE

NOS

AFS	AUTOIDEF0	AUTOMATIC DOCUM	FAME
FTNXREF	NASA-VATS	SIGS	SYSXREF

EXEC 8

ARTS	CS4	ONLINE ASSIST	SARA-U
STRUCTURE(S)			

OS/MVS

ACT/1	AISIM	CAPTURE/MVS(TM)	CICS DUMP ANALY
CUE	DARTS	DAS	DDPM
DQM	FOCUS	GENTESTS	JET
LOOK	OSCYBR	PPP	QCM
REFLECT II	SCG	SCG/DQM	SMT
SPEAR	SYDIM	SYDOC	TIMER
TSA/PPE			

GCOS

COBOL/SPP	FAVS	GENTESTS	ISDS
JOCIT	JOVIAL/J3SC	JSDD	PSL
QCRT	RADC/FCA	SARA-H	STRUC1/STRUC2
STRUCTURE(S)			

SCOPE 3.4

CADA	TFA

UNIX

MSEF	ONLINE ASSIST	PWB FOR VAX/VMS	RA
XAS8	YACC		

MASTER

TIMECS

MULTICS

BSC	GENTESTS	JOCIT	MEFIA
MENTOR	PERLUETTE	SARA	

CDC 6600 SECRE

PMCS

VMS

ARTS	ATTEST	FAME	INFORM
MEDL-R	MEDL-D	MENTOR	PWB FOR VAX/VMS
SDDL	SLIB		

SCP

SPC

OS/MVT

LOOK	NUMBER	REFLECT II

RSTS

DOCUMENTER	HARDWARE SIMULA	SLIB

INTERLISP

AFFIRM

4JS2

INSTRU

RSX-11

FOSTRA	INFORM	LIBREF	MED-SYS
MEDL-R	MEFIA	NUMBER/DEC	QUIKCODE
SAP	SAP/H	SLIB	

TOPS-10/20

CS4	TOOLS DATABASE

KRONOS

ATA-FASP	FASP	PIDGIN-FASP	PMCS

SIRIS

GENTEXTS	MENTOR	PERLUETTE

IAS

INFORM

ECL

CENSUS	COMPARE	CRISPFLOW	DOCUMENT

LEXICON LOGOS

APPENDIX L

TOOLS IN THE PUBLIC DOMAIN

ADA COMPILER	ADA ENVIRONMENT	ADS/CERL	AFFIRM
AISIM	ASRP	ATA-FASP	ATTEST
AUDIT	BLKGEN-BDD	CADSAT	CENSUS
CGJA	CHILL TRANS	COMPARE	CONFIGURATOR
CQD	CRISPFLOW	DAVE	DIRCOM
DOCUMENTER	DOCUMENT	FASP	FOSTRA
FTN-77 ANALYZER	FTN ANALYZER	HARDWARE SIMULA	INSTRU
JOVIAL TCA	JSDD	LANG INSTRUCTOR	LEXICON
LOGOS	MAGLE	NETWORK PLANNER	PFORT
PIDGIN-FASP	PREF HDR GEN	PROG COMP ANAL	RENAME
RISOS TOOLS	SAP	SAP/H	SARA
SDDL	SFORT-1	SFTRAN3	SMMA
SREM	STAT ENT & EVAL	SURGE 72	TAB40
TIDY	TOOLPACK	TOOLS DATABASE	UCSD P-SYSTEM
VIRTUAL OS			

APPENDIX M

TOOLS BY INFORMATION SOURCE

TRW SOFTWARE TOOLS CATALOG

ABS	ALIAS	AMPIC	ASEQ
ASSIST-I	ATDG	AUTDOC	AUTOCOM
AUTOFLOW/TRW	AUTORETEST	BLKGEN/SPECPN	BUDGET VS ACTUA
CA	CADMUS	CALLREF	CARA
CCA	CCREF	CHECKSUM	COMDIM
COMGEN/TRW	COMGEN	COMLIST/TRW	COMLIST
COMSCAN	COMSORT	COMSTAR	CONFIG
COTUNE II	CPAL	CROREF	DATAMACS
DCD	DECA	DEPCHT	DICTANL/LOCATE
DOCGEN	DOCUMENTOR	DPAD	DPNDCY
DRIVER	EAVS	ESAP	EVP
FACES	FCA	FLOBOL	FLODIA
FLOWGEN	FORMAN	FORREF	FORTREF
GIM/GIM II	GIRAFF	HARP	INFORM/REFORM
JAVS	JIGSAW	LIBRARIAN	LOGIC
LOGIFLOW	MPS	N-SQUARED	NODAL
OPTIMIZER II	PAC II	PACE	PACE-C
PDL	PDS	PDS FLOW	PDSS
PERCAM	PET	PFS	PPE
QUICK-DRAW	REFER	REFORM	S-FORTRAN
SALSIM	SDP	SDVS	SPELL
SPREAD	SPRINT	SREP	STAG/TEMS
STRUCTURING ENG	STRUCT	SUBCRS	SURVAYOR
SYMCRS	TAFIRM	TATTLE	TDBCOMP
TDEM	TEST PREDICTOR	TRANSFOR	TRWPLT
UCA			

COMPLETED SUBMISSION TO NBS

ADA COMPILER	ADS/CERL	ARTS	ASRP
ATTEST	AUDITOR	AUTOIDEF0	BEST/1 (TM)
BSC	CAPTURE/MVS(TM)	CAVS	CHILL TRANS
COBOL OPTIMIZ	COBOL/SPP	COBOL TESTING	COBOL TRACING
CONFIGURATOR	DARTS	DAS	DAVE
DDPM	DI-3000	DOCUMENTER	DOCUMENTER A
DYNA	EXPEDITER	FAVS	FOCUS
FORTRAN OPTIMIZ	FORTRAN TRACING	FORTRAN TESTING	FTN-77 ANALYZER
FTN ANALYZER	FTNCODER	FTNXREF	GRAFMAKER

HARDWARE SIMULA	HAWKEYE (TM)	INSERT	INTERFACE DOCUM
JOCIT	JOVIAL/VS	JOVIAL TCA	JOVIAL/J3SC
LANG INSTRUCTOR	MAGLE	MEMORY MNG LIB	MODULE ORDERER
MONITOR	NETWORK PLANNER	PROGRAM GENERAT	PSL
RADC/FCA	RATCODER	SADAT	SCAN/370
SCG/DQM	SIGS	SNOOP	STAT ENT & EVAL
STRUC1/STRUC2	STRUCTURIZER	STRUCTURE(S)	SYSXREF
TPT	TRAILBLAZER	X TO Y TRANS PK	

AIAA SURVEY OF SOFT DEV TOOLS

ADS	AFS	ASA-PMS	AUTOMATIC DOCUM
BLKGEN-BDD	CADA	CENSUS	CGJA
CICS DUMP ANALY	COGENT	COMPARE	CORE
CPA	CRISPFLOW	CUE	DA
DAVE	DIRCOM	DOCU/TEXT	DOCUMENT
DOSSIER	EASYTROL	FOSTRA	IORL
ISDS	JET	JSDD	LEXICON
LOGOS	MED-SYS	METRAN	MSEF
N5500	NASA-VATS	OPTIMUS	PET
PFORT	PMCS	PMS IV	PPP
PREF HDR GEN	PROG COMP ANAL	PROGLOOK	PRONET
QCM	QCRT	REFLECT II	RENAME
SAP	SAP/H	SARA-IV	SARA-III
SARA-U	SARA-H	SCERT	SCOPE
SFORT-1	SFTRAN3	SLIM	SMAL/80
SMMA	SMT	SPC	SPEAR
SSA	SYDIM	TAPS/AM	TFA
TIDY	TIMECS	TRMS	TSA/PPE
UF	XAS8		

RADC-TR-80-13, INTERIM REPORT

ASSET	ATDG	ATTEST	CASEGEN
CCS	CSPP	DAVE	EFFIGY
FACES	FADEBUG-I	FAST	FAVS
FORAN	JAVS	JOYCE	LIBRARIAN
OPTIMIZER II	PACE	PFORT	REL MEAS MODEL
SEF	SELECT	SPTRAN	SUS
SYSTEM MONITOR			

PRODUCT DESCRIPTION

ACT/1	ADA-ATOM	ASC	CBLSHORT
COBOL/SP	COBOL/ADE	COBOL/QDM	COBOL/DV
COBOL/CP	CPA-ADR	CRYSTAL (TM)	ECA AUTOMATION
ENFORCE	INFORM	LOOK	MEDL-R
MEDL-P	MEDL-X	MEDL-D	REFTRAN (TM)
SPECTRUM-1	SRTRAN BASELINE	SYDOC	SYSTEM-80
TCAT	XPEDITER		

TOOL FAIR

AFFIRM	AISIM	ARGUS/MICRO	AUTO-DBO
COMMAP	CS4	DQM	DYNA

FAME	FTN-77 ANALYZER	IFTRAN (TM)	INSTRU
ISUS	ITB	LILITH	LOGICFLOW
MSEF	ONLINE ASSIST	POD	PSL/PSA
PWB FOR VAX/VMS	RXVP80 (TM)	SARA	SCG
SCHEMACODE	SDDL	SDP/MAYDA	SLIM
SOFTOOL 80 (TM)	SREM	SRIMP	THE ENGINE
TOOLS DATABASE	UCSD P-SYSTEM	VIRTUAL OS	

BCS SOFTWARE TOOLS CATALOG

DECKBOY COMPAR	GADTR AID	LAYOUT	SPECLE/DARS

FEDERAL SOFT EXCHANGE CATALOG

COBOL STRUCT	FTN ANALYZER	NUMBER	OSCYBR
REALIGNMENT SYS	TIMER		

NTIS

CQD	SURGE 72	TAB40

ADI/CNRS CATALOGUE 1980

GENTESTS	GENTEXTS	MEFIA	MENTOR
PERLUETTE			

NOSC SEATECS TOOLS SURVEY

ADF	ATA-FASP	ATA-SAI	AUTOFLOW (TM)
CADSAT	COPE (TM)	CTC	DATA DESIGNER
DIFFS (TM)	FASP	LIBREF	MARK IV (TM)
MSL	MTR	NUMBER/DEC	PIDGIN-FASP
QUIKCODE	RA	RTT	SCOBOL (TM)
SDL	SLIB	SMS	YACC

TECHNICAL LITERATURE

ADA ENVIRONMENT	AUDIT	CRYSTAL (TM)	FASP
GOTO-ANALYZER	IPDS	PBASIC	RATFOR
RISOS TOOLS	TEVERE-1	TOOLPACK	

APPENDIX N

TOOL ABSTRACTS

The following is brief definition of each of the possible data elements that can be stored in the database for each tool. This is followed by the data that is currently contained in the database for each tool. If a data element does not appear in the information provided for a tool, it is because no information was available for that element.

ACRONYM: Acronym or other short name.

TITLE: Title of tool.

CLASSIFICATION: One of the following:
- Software Management, Control, and Maintenance
- Software Modeling and Simulation
- Requirements/Design Specification and Analysis
- Program Construction and Generation
- Source Program Analysis and Testing
- Software Support System/Programming Environment.

FEATURES: Features provided by the tool ordered according to the taxonomy of tool features.

STAGE OF DEVELOPMENT: One of the following:
- Concept
- Design
- Implemented.

DATE (YYMMDD): YY - year, MM - month, DD - day of development.

IMPLEMENTATION LANGUAGE: The language(s) and dialect(S) in which the tool is written.

TOOL PORTABLE: Whether or not the tool can be transported to other machines.

TOOL SIZE: Number of source statements, disk size, or core memory size.

COMPUTER (OTHER HARDWARE): Hardware manufacturer/identification of machine necessary for use of the tool (Other machine hardware necessary for use of the tool).

OS (OTHER SOFTWARE): Operating system/release necessary for use of the tool. (Other software necessary for use of the tool).

TOOL AVAILABLE: Whether or not the tool can be made available to other potential users.

PUBLIC DOMAIN: Whether or not the tool is in the public domain.

RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): Restrictions on the availability of the tool.

TOOL SUPPORTED: Whether or not the tool is supported.

TOOL SUPPORT: Who supports the tool.

TOOL SUMMARY: Brief, one-paragraph summary of the tool. Clarification of features that the tool provides. Discussion of experience with the tool, such as performance characteristics, projects it was developed or used for, or any other pertinent information.

DOCUMENTATION: Types of available documentation.

DOC LENGTH: Extent of available documentation (page count).

REFERENCES: Articles or publications that discuss the tool and are readily available in the open literature, KEY (AUTHYYC), AUTHOR(S), TITLE, PUBLICATION, DATE.

DEVELOPER: Developer(s) of tool.

CONTACT: Contact(s) for more information about the tool.

INFORMATION SOURCE: Source(s) of the information contained in the database.

ACRONYM: ABS, TITLE: ABSTRACT RETRIEVAL PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, EDITING, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, TEST DATA MANAGEMENT, LIBRARY MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COMPASS
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE ABSTRACT RETRIEVAL PROGRAM WILL PROVIDE A MEANS OF MAINTAINING A FILE OF DOCUMENTS AND/OR ANY INFORMATION THAT IS CORRELATED BY SOME IDENTIFICATION CODE (KEYWORD). THE PROGRAM WILL ALLOW FOR THE UPDATING OR EDITING OF THESE FILES AS WELL AS VARIOUS TYPES OF RETRIEVAL LISTINGS. THE ABSTRACT RETRIEVAL PROGRAM IS A VERY SIMPLE KEYWORD SYSTEM. ITS POTENTIAL APPLICATIONS EXTEND FAR BEYOND STORAGE OF DOCUMENT OR PROGRAM ABSTRACTS. FOR EXAMPLE, A KEYWORD SYSTEM CAN BE USED TO CORRELATE TEST REQUIREMENTS STATEMENTS WITH TEST CASE NUMBERS, OR TO CORRELATE PROPOSAL PARAGRAPH NUMBERS WITH RFP/SOW PARAGRAPH NUMBERS FOR REQUIREMENTS TRACEABILITY. ALTHOUGH A GIM-TYPE SYSTEM MAY BE REQUIRED FOR MORE COMPLICATED INDEXING AND STORAGE REQUIREMENTS THE ABSTRACT RETRIEVAL PROGRAM IS A SIMPLE, INEXPENSIVE APPROACH TO SOLVING A CLASS OF STRAIGHTFORWARD KEYWORD PROBLEMS. (UNLIKE GIM, THE PROGRAM IS NOT AN ON-LINE KEYWORD SYSTEM. THIS MAY BE A SIGNIFICANT LIMITATION FOR CERTAIN APPLICATIONS.)
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DATA MANAGEMENT SYSTEMS DEPARTMENT
CONTACT: MILT HAYASHIDA, TRW, DATA MANAGEMENT SYSTEMS DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-2910
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: ACT/1, TITLE: AN ONLINE APPLICATION FOR DEVELOPING ONLINE APPLICATIONS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, DATA INPUT, TRANSFORMATION, EDITING, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, LISTINGS, STATIC ANALYSIS, MANAGEMENT, FILES MANAGEMENT, DOCUMENTATION MANAGEMENT, CONTROL, INTERACTIVE,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL PORTABLE: NO, TOOL SIZE: FEWER THAN 6 CYL ON 3330 DISK
COMPUTER (OTHER HARDWARE): IBM 360/370 (IBM 3270 DISPLAY TERMINALS OR EQUIVALENT)
OS (OTHER SOFTWARE): OS/VS (TSO OR CICS, VSAM), OS/MVS (TSO OR CICS, VSAM)
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLICATION DEVELOPMENT METHODOLOGIES (ADM) LTD.
TOOL SUMMARY: ACT/1 IS USED TO DEVELOP AND MANAGE AN ONLINE APPLICATION THROUGHOUT ITS ENTIRE LIFE CYCLE. ACT/1 PROVIDES INTEGRATED DEVELOPMENT AND PRESERVES FUNCTIONAL INTEGRITY DURING MAINTENANCE. ACT/1 DOES THE FOLLOWING: (1) PERMITS THE INTERACTIVE DESIGN AND CONSTRUCTION OF APPLICATION SCREENS BY SIMPLY KEYING THE LAYOUT DIRECTLY ON THE DISPLAY TERMINAL, (2) PERMITS THE INTERACTIVE SPECIFICATION OF AN APPLICATION DIALOGUE, (3) PERMITS DEVELOPERS TO PROVIDE APPLICATION ROUTINES IN STANDARD LANGUAGES, (4) PROVIDES FOR THE NAMING OF FIELDS ON SCREENS, (5) SUPPORTS APPLICATION SIMULATIONS ("SCENARIOS" AND "DEMOS"), (6) PRODUCES PRINTED DOCUMENTATION, (7) MAINTAINS SCREENS, FLOW LOGIC, AND APPLICATION ROUTINES - INDEPENDENTLY, (8) AND DIRECTS THE EXECUTION OF THE APPLICATION.
DOCUMENTATION: USER'S GUIDE, INSTALLATION GUIDE
DEVELOPER: ART BENJAMIN ASSOCIATES LTD.
CONTACT: K. E. WOOTTON, ART BENJAMIN ASSOCIATES LTD., 250 CONSUMERS RD., 4TH FLOOR, WILLOWDALE, ONTARIO, CANADA, 416-494-9570
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: ADA-ATOM, TITLE: THE ADA-ATOM MACHINE
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, ADA, TRANSFORMATION, TRANSLATION, COMPILATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, ATOM,
STAGE OF DEVELOPMENT: DESIGN
TOOL AVAILABLE: NO
TOOL SUMMARY: THE ADA-ATOM MACHINE WILL BE A HARDWARE INTERPRETER THAT WILL BE DESIGNED USING A BIT SLICE PROCESSOR TO INTERPRET THE ADA-ATOM LANGUAGE. AN ADA COMPILER IS CURRENTLY BEING DESIGNED THAT WILL HAVE A TARGET LANGUAGE CALLED ATOM. THE LANGUAGE ATOM DERIVES ITS COMPLETE SPECIFICATION FROM ATTRIBUTED ACTION SYMBOLS WHICH ARE ADDED TO THE INPUT GRAMMAR SO THAT THE RECOGNISER CORRESPONDING TO THE INPUT GRAMMAR IS TRANSFORMED INTO A TRANSLATOR WHO'S OUTPUT IS A STRING OF ATOMS - HENCE THE NAME ADA-ATOM. THE COMPILER WILL HAVE AN INSERT CORRECTABLE LL(1) CFG FOR ADA AS THE INPUT GRAMMAR UPON WHICH THE SEMANTIC ACTION SYMBOLS FOR ADA WILL BE EMBEDDED IN ORDER TO YIELD THE REQUIRED ATOM LANGUAGE.
DEVELOPER: ARNOLD J. LEVY
CONTACT: ARNOLD J. LEVY, APPLICATION SOFTWARE, 5TH FLOOR,STANDARD HOUSE, 67 SIMMONDS ST, JOHANNESBURG, 2001, SOUTH AFRICA, (011)838-3451
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: ADA COMPILER, TITLE: ADA COMPILER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, ADA, TRANSFORMATION, TRANSLATION, COMPILATION, MACHINE OUTPUT, INTERMEDIATE CODE, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 801200
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL SIZE: 936 STATEMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THE ADA COMPILER IS AN INCREMENTAL INTERACTIVE ADA PROGRAM TRANSLATOR. IT READS ONE STATEMENT AT A TIME AND TRANSLATES IT INTO THE UNOPTIMISED OUTPUT CODE. THE COMPILER USES A SYNTAX ANALYSER TO PRODUCE A CONDENSED REVERSED POLISH REPRESENTATION OF EACH STATEMENT. A PASS THROUGH THE REVERSED POLISH NOTATION IS REQUIRED TO GENERATE THE TARGET C
DOCUMENTATION: TECHNICAL DESCRIPTION (20)
REFERENCES: [PAYN73], A.J. PAYNE, "SAPS A CRITICAL REVIEW", SPERRY UNIVAC LDC, 730000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: ADA ENVIRONMENT, TITLE: ADA PROGRAMMING SUPPORT ENVIRONMENT
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, CODE INPUT, ADA, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, ERROR CHECKING, DYNAMIC ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: DESIGN, DATE (YYMMDD): 840000
TOOL AVAILABLE: NO, PUBLIC DOMAIN: YES
TOOL SUMMARY: THE ADA ENVIRONMENT WILL SUPPORT THE DOD COMMON HIGH-ORDER LANGUAGE, ADA. THE ADA ENVIRONMENT WILL BE A COMPREHENSIVE, INTEGRATED PROGRAMMING ENVIRONMENT THAT WILL HAVE THE FOLLOWING OBJECTIVES: LIFE-CYCLE SUPPORT, OPEN-ENDED ENVIRONMENT, CONFIGURATION CONTROL, PROJECT TEAM SUPPORT, AND PORTABILITY. FOR REASONS OF PORTABILITY, THERE WILL BE THREE DISTINCT LEVELS WITHIN THE ENVIRONMENT: THE KERNAL ADA PROGRAMMING SUPPORT ENVIRONMENT (KAPSE), THE MINIMAL APSE (MAPSE), AND THE APSE. BROADLY SPEAKING, THE KAPSE IS A SYSTEM AND TOOL PORTABILITY LEVEL, AND THE MAPSE IS A USER (PROGRAMMER) PORTABILITY LEVEL. THE APSE IS BASED UPON A PARTICULAR MAPSE, BUT MAY INCLUDE ADDITIONAL TOOLS THAT SUPPORT USE OF SPECIFIC METHODOLOGIES BY VARIOUS MEMBERS OF THE PROJECT TEAM THROUGHOUT THE LIFE CYCLE. CURRENTLY, THERE ARE DUAL DEVELOPMENT EFFORTS AT THE MAPSE LEVEL AND EACH IS BASED ON THE "STONEMAN" REQUIREMENTS. THE DEVELOPMENT EFFORTS ARE BEING SUPPORTED BY THE US AIR FORCE AND THE US ARMY.

REFERENCES: [STEN81], VIC STENNING, ET. AL., "THE ADA ENVIRONMENT: A PERSPECTIVE", COMPUTER, 810600
[DOD80], US DEPARTMENT OF DEFENSE, "REQUIREMENTS FOR ADA PROGRAMMING SUPPORT ENVIRONMENTS: "STONEMAN"", OFFICE OF THE UNDERSECRETARY OF DEFENSE, WASHINGTON, DC, 800200
CONTACT: PETE FONASH, ADA JOINT PROGRAM OFFICE, 801 NORTH RANDOLPH ST., ARLINGTON, VA, 22203, USA, 202-696-4387
VANCE MALL, ADA JOINT PROGRAM OFFICE, 801 NORTH RANDOLPH ST., ARLINGTON, VA, 22203, USA, 202-696-4387
INFORMATION SOURCE: TECHNICAL LITERATURE

ACRONYM: ADF, TITLE: AUTOMATED DESIGN FACILITY
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, GRAPHICS, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, STRUCTURE CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL PORTABLE: YES, TOOL SIZE: 128 K BYTES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS
TOOL SUPPORTED: YES, TOOL SUPPORT: M. BRYCE ASSOCIATES, INC.
TOOL SUMMARY: THE USER DEFINES REQUIREMENTS AND THEN USES THE ADF TO PERFORM SYSTEMS DESIGN. ADF PERFORMS DATA FLOW ANALYSIS, EVALUATES ALL DATA TRANSFORMATIONS, REVIEWS DATA STRUCTURES AND TAKES INTO ACCOUNT INTERFACES WITH OTHER SYSTEMS WITHIN THE USERS ENVIRONMENT. ADF FULLY SUPPORTS THE "PRIDE" - ASDM AUTOMATED SYSTEMS DESIGN METHODOLOGY AND AUTOMATES MANY OF ITS FEATURES. AS AN OPTION TO THE METHODOLOGY, ADF PROVIDES FOR OUTPUT ANALYSIS AND AUTOMATIC GENERATION OF DESIGN DOCUMENTATION.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: M. BRYCE ASSOCIATES, INC.
CONTACT: M. BRYCE ASSOCIATES, INC., 1248 SPRINGFIELD PIKE, CINCINNATI, OH, 42515, USA, 513-761-8400
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: ADS, TITLE: ADVANCED DEBUGGING SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, CICS, USER OUTPUT, DIAGNOSTICS, DYNAMIC ANALYSIS, TRACING, BREAKPOINT CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL SIZE: CORE: 15K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS, DOS, DOS/VS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE

TOOL SUMMARY: ADS (ADVANCED DEBUGGING SYSTEM) IS DESIGNED TO MONITOR AND DEBUG APPLICATION SYSTEMS WRITTEN FOR IBM CICS. SOME OF THE MAJOR ADS FEATURES ARE PROVISION OF A KEYWORD/COMMAND LANGUAGE TO ALLOW ACCESS TO CICS RESOURCE AND INCORPORATION OF A LANGUAGE STRUCTURE SIMILAR TO COBOL. IT ALLOWS A PROGRAMMER TO DYNAMICALLY INSERT SOURCE STATEMENTS INTO EXISTING LOAD MODULES WITHOUT HAVING TO INTERPRET THE OBJECT INSTRUCTIONS. ADS CAN MONITOR THE EXECUTION OF A SELECTED ROUTINE, OR THE ENTIRE PATH OF A TRANSACTION TO DETECT AND PREVENT AN ERROR CAUSED BY ILLEGAL FREEMAIN EXECUTIONS, BAD FILE OR TERMINAL WRITES, ALTERATION OF CONTROL AREAS, OR LOSS OF ADDRESSABILITY, AND IT WILL SUSPEND THE OFFENDING TASK BEFORE DAMAGE OCCURS. CONTROL OF THE TASK IS GIVEN TO THE PROGRAMMER AT ANY DESIGNATED TERMINAL. THE SYSTEM CAN IDENTIFY STORAGE ADDRESSES WITHIN CICS AND GIVES DESCRIPTIVE HEADINGS THAT RELATE TO THE FIELDS BEING DISPLAYED.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: GARY BERGMAN ASSOCIATES, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: ADS/CERL, TITLE: AUTOMATED DOCUMENTATION SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, CDC FORTRAN, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 790200
IMPLEMENTATION LANGUAGE: FORTRAN CDC
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM NTIS
TOOL SUPPORTED: YES, TOOL SUPPORT: CERL
TOOL SUMMARY: THE ADS SYSTEM PROVIDES "PROGRAM REFERENCE MANUAL" TYPE REPORTS RELYING ON COMMENTS IN THE FORTRAN SOURCE CODE. IT IS INTENDED TO BE INCLUDED FROM THE BEGINNING OF DEVELOPMENT THROUGH IMPLEMENTATION OF THE SYSTEM. THE ADS DOCUMENTATION AND RESULTANT REPORTS PROVIDE BOTH THE MANAGER AND OTHER PROGRAMMERS ON THE PROJECT WITH INFORMATION ON THE DEVELOPMENT STATUS. IT HAS BEEN USED IN SEVERAL SYSTEM DEVELOPED AT CERL.
DOCUMENTATION: USERS MANUAL (84)
DEVELOPER: CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)
CONTACT: LINDA LAWRIE, DEPT OF ARMY, CERL, PO BOX 4005, CHAMPAIGN, IL, 61820, USA, 217-352-6511
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: AFFIRM, TITLE: A SPECIFICATION AND VERIFICATION SYSTEM

CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, VHLL INPUT, ALGEBRAIC SPECIFICATIONS, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, CONSISTENCY CHECKING, TYPE ANALYSIS, DYNAMIC ANALYSIS, ASSERTION CHECKING, FORMAL VERIFICATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: LISP INTERLISP
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20
OS (OTHER SOFTWARE): INTERLISP
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): ACCESS PREFERRED OVER ARPANET
TOOL SUPPORTED: YES, TOOL SUPPORT: INFORMATION SCIENCES INSTITUTE
TOOL SUMMARY: AFFIRM IS AN EXPERIMENTAL SYSTEM FOR THE ALGEBRAIC SPECIFICATION AND VERIFICATION OF ABSTRACT DATA TYPES AND PASCAL-LIKE PROGRAMS USING THESE TYPES. THE HEART OF THE SYSTEM IS A NATURAL DEDUCTION THEOREM PROVER FOR THE INTERACTIVE PROOF OF VERIFICATION CONDITIONS AND PROPERTIES OF DATA TYPES. ADDITIONAL FEATURES INCLUDE TOOLS FOR THE ANALYSIS OF ALGEBRAIC SPECIFICATIONS, A LIBRARY OF DATA TYPES, AND USER INTERFACE FACILITIES. OUR EXPERIENCE INCLUDES EXTENSIVE EXPERIMENTATION WITH DATA TYPE SPECIFICATIONS, VERIFICATION OF SMALL PROGRAMS, THE SPECIFICATION AND PARTIAL PROOF OF A LARGE FILE UPDATING MODULE, AND THE PROOF OF HIGH LEVEL PROPERTIES OF PROTOCOLS AND SECURITY KERNELS.
DOCUMENTATION: REFERENCE MANUAL, USERS GUIDE
REFERENCES: [THOM81], THOMPSON, D. H., ET AL., "SPECIFICATION AND VERIFICATION OF COMMUNICATION PROTOCOLS IN AFFIRM", ISI/RR-81-88, USC/INFORMATION SCIENCES INSTITUTE, 810200
DEVELOPER: USC INFORMATION SCIENCES INSTITUTE
CONTACT: R. W. ERICKSON, INFORMATION SCIENCES INSTITUTE, 4676 ADMIRALTY WAY, MARINA DEL REY, CA, 90291, USA, 213-822-1511
S. L. GERHART, INFORMATION SCIENCES INSTITUTE, 4676 ADMIRALTY WAY, MARINA DEL REY, CA, 90291, USA, 213-822-1511
INFORMATION SOURCE: TOOL FAIR

ACRONYM: AFS, TITLE: AUTOMATIC FLOWCHARTING SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 63000
COMPUTER (OTHER HARDWARE): CDC CYBER
OS (OTHER SOFTWARE): NOS

TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUMMARY: A COMMENT-DRIVEN SYSTEM WHICH ALLOWS THE USER TO DEFINE FLOWCHARTS VIA COMMENTS. THIS ALLOWS THE USER TO EFFECTIVELY FLOWCHART "PSEUDO-CODE", EMBEDDED IN COMMENTS, AT WHATEVER LEVEL OF ABSTRACTION THE USER DESIRES. CONTAINS DIFFERENT BOX SHAPES FOR DIFFERENT PROGRAM CONTROL FEATURES (E.G., BRANCH, TEST, SUBROUTINE CALL), AND ALLOWS THE USER TO SPECIFY THE FORMAT OF THE GENERATED FLOWCHART. THE USER MAY DEFINE HIS/HER OWN FLOWCHART COMMENT CHARACTERS, AND MAY SELECTIVELY SPECIFY WHICH ROUTINES ARE TO BE FLOWCHARTED BY THE AFS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [SABE77], SABETKA,D., AND W.R. FRANZ, "AUTOMATIC FLOWCHARTING SYSTEM", GENERAL DYNAMICS POMONA DIVISION TECH. MEMO. 577-0-90A, 770907
DEVELOPER: GENERAL DYNAMICS
CONTACT: RICHARD W. MC HARD, GENERAL DYNAMICS, P.O. BOX 2507, POMONA, CA, 91766, USA, 714-629-5111
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: AISIM, TITLE: AUTOMATED INTERACTIVE SIMULATION MODELING SYSTEM
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, USER OUTPUT, GRAPHICS, TABLES, DYNAMIC ANALYSIS, SIMULATION, COMPUTER SYSTEM SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, SIMSCRIPT II.5
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): AMDAHL 470 (HP2647/48 GRAPHICS TERMINAL)
OS (OTHER SOFTWARE): OS/MVS (PLOT 10, SIMSCRIPT II.5, ADBMS (U. OF MICH))
PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE JAN 1982 THROUGH USAF/ESD/TOIT, HANSCOM AFB, MASS.
TOOL SUPPORTED: NO
TOOL SUMMARY: THE AUTOMATED INTERACTIVE SIMULATION MODELLING SYSTEM (AISIM) IS AN OUTGROWTH OF TWO PREVIOUS MODELLING SYSTEMS: THE DESIGN ANALYSIS SYSTEM (DAS), WHICH PROVIDED INTERACTIVE GRAPHICS SUPPORT FOR MODELLING GENERAL FUNCTIONS IN A PROCEDURE-ORIENTED SYSTEM, AND THE DISTRIBUTED DATA PROCESSING MODEL (DDPM), WHICH CONSISTED OF A LIBRARY OF STANDARD, TABLE-DRIVEN COMPUTER SYSTEM MODELS. AISIM COMBINES THE FEATURES OF BOTH TO PROVIDE AN INTERACTIVE, GRAPHICS SIMULATION SYSTEM FOR DISTRIBUTED SYSTEM ANALYSIS. AISIM PROVIDES THREE TYPES OF INTERFACES FOR MODELLING COMPUTER SYSTEMS. FLOWCHART-ORIENTED PROCESSES REPRESENTING SOFTWARE, INFORMATION FLOW, OR MAN/MACHINE PROCEDURES ARE ENTERED VIA AN INTERACTIVE GRAPHICS LANGUAGE CONSISTING OF EXECUTION CONTROL, RESOURCE ALLOCATION, AND TIMING PRIMITIVES. ARCHITECTURES OF INTERCONNECTED PROCESSORS, CHANNELS, DISKS, TAPES, AND OTHER DEVICES ARE GRAPHICALLY ENTERED VIA AN INTERACTIVE

ARCHITECTURE DESIGN EDITOR.
DOCUMENTATION: SYSTEM DESCRIPTION, USERS MANUAL
REFERENCES: [WILL78], R. WILLIS, "DAS - AN AUTOMATED SYSTEM TO SUPPORT DESIGN ANALYSIS", PROC. 12TH ASILOMAR CONFERENCE, 781106
DEVELOPER: HUGHES AIRCRAFT COMPANY
CONTACT: BILL AUSTELL, HUGHES AIRCRAFT COMPANY, PO BOX 3310, FULLERTON, CA, 92634, USA, 714-732-3232
INFORMATION SOURCE: TOOL FAIR

ACRONYM: ALIAS, TITLE: ALIAS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THIS PROGRAM RENAMES VARIABLES (ACCORDING TO INPUT REQUESTS) IN FORTRAN SOURCE CODE.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: AMPIC, TITLE: AMPIC
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, ASSEMBLY LANGUAGE, USER OUTPUT, GRAPHICS, FLOW CHARTS, LISTINGS, DYNAMIC ANALYSIS, SYMBOLIC EXECUTION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: SNOBAL
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: AMPIC IS A PROGRAM THAT STRUCTURES, TRANSLATES AND SYMBOLICALLY EXECUTES OTHER PROGRAMS, WRITTEN IN HIGHER ORDER LANGUAGE (CURRENTLY IMPLEMENTED FOR WSC FORTRAN) OR ASSEMBLY LANGUAGE (WSC, LITTON L4516D, SKC-2070, ETC.). A COMPLETE AMPIC RUN ON A GIVEN INPUT MODULE CONSISTS OF FOUR AMPIC PHASES: FIRST, THE MODULE IS SEGMENTED INTO CODE GROUPS THAT CAN BE TREATED AS INDIVIDUAL ELEMENTS (NODES) OF A FLOWCHART; SECOND, A "STRUCTURED" FLOWCHART IS CREATED; THIRD, THE INPUT MODULE IS TRANSLATED INTO MATHEMATICAL-TYPE STATEMENTS; FOURTH, THE INPUT/OUTPUT FUNCTIONAL EXPRESSIONS FOR THE ENTIRE PATHS THROUGH THE INPUT MODULE ARE PROVIDED AND SYMBOLICALLY EXECUTED.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100

DEVELOPER: LOGICON, INC.
CONTACT: MIKE IKEZAWA, LOGICON, INC., 255 WEST 5TH, SAN PEDRO, CA, USA, 213-831-0611
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: ARGUS/MICRO, TITLE: SOFTWARE ENGINEERING WORKSTATION
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, TEXT INPUT, CODE INPUT, FORTRAN, PASCAL, FORTRAN 77, TRANSFORMATION, TRANSLATION, COMPILATION, EDITING, INSTRUMENTATION, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, GRAPHICS, TABLES, LISTINGS, STATIC ANALYSIS, MANAGEMENT, FILES MANAGEMENT, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
TOOL PORTABLE: YES
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): UNDER PROTOTYPE DEVELOPMENT, CURRENTLY FOR INTERNAL BOEING USE
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY
TOOL SUMMARY: ARGUS ON A MICROCOMPUTER PROVIDES A NUMBER OF CAPABILITIES SIMILAR TO THOSE AVAILABLE WITH ARGUS ON MAIN-FRAME COMPUTERS, BUT ALSO PROVIDES SOME IMPORTANT NEW CAPABILITIES AFFORDABLE WITH THE DEDICATED PROCESSING POWER AND HIGH DISPLAY BAND WIDTH OF A MICROCOMPUTER. THROUGH A MENU-DRIVEN INTERFACE, ARGUS PROVIDES ACCESS TO PASCAL AND FORTRAN 77 COMPILERS, LINK EDITOR, DAPPER -- A DYNAMIC ANALYZER FOR PASCAL, PASCAL SOURCE CROSS REFERENCE GENERATOR, AND VED -- A POWERFUL TEXT AND GRAPHICS EDITOR. VED HAS BEEN TAILORED FOR THE CREATION OF ''DATA FLOW'' DIAGRAMS AND VIEWFOILS, IN ADDITION TO MANY OTHER GRAPHICAL CHARTS FOR ARBITRARY DOCUMENTATION PURPOSES. COMPLEMENTING THESE CAPABILITIES IS A SET OF COMPATIBLE PRINT, PLOT AND FILE MANIPULATION UTILITIES.
DOCUMENTATION: REFERENCE MANUAL
REFERENCES: [STUC81], LEON G. STUCKI AND HARRY D. WALKER, "CONCEPTS AND PROTOTYPES OF ARGUS -- A PROGRESS REPORT", SOFT ENG ENV, ED. HORST HUENKE, NORTH-HOLLAND PUB CO, 810000
DEVELOPER: BOEING COMPUTER SERVICES
CONTACT: LEON G. STUCKI, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346 M/S 9C-03, SEATTLE, WA, 98124, USA, 206-575-5118
WILLIAM C. KING, BOEING COMPUTER SERVICES, PO BOX 24346, SEATTLE, WA, 98124,
INFORMATION SOURCE: TOOL FAIR

ACRONYM: ARTS, TITLE: AUTOMATED REQUIREMENTS TRACEABILITY SYSTEM

CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, USER OUTPUT, TABLES, STATIC ANALYSIS, CONSISTENCY CHECKING, MANAGEMENT, DATA BASE MANAGEMENT, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 801001
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00, UNIVAC 11XX, DEC VAX-11
OS (OTHER SOFTWARE): EXEC 8, VMS
TOOL SUPPORTED: PARTIAL, TOOL SUPPORT: LOCKHEED MISSILES SPACE COMPANY INC.
TOOL SUMMARY: ARTS IS A BOOKKEEPING PROGRAM WHICH OPERATES ON A DATA BASE CONSISTING OF SYSTEM REQUIREMENTS AND REQUIREMENT-RELATED ATTRIBUTES. THE MAJOR FUNCTION OF ARTS IS TO PROVIDE RAPID AND ACCURATE TRACEABILITY, UPWARD AND DOWNWARD, IN A REQUIREMENTS STRUCTURE (TREE). TRACEABILITY ALLOWS ASSESSMENT OF THE IMPACT OF CHANGES, ASSURES THAT TOP-LEVEL REQUIREMENTS ARE STATISFIED BY THE LOWER-LEVEL STRUCTURE, FACILITATES GENERATION OF TEST PLANS AND TESTING AGAINST REQUIREMENTS, AND IS ESSENTIAL FOR STRUCTURED DESIGN AND DEVELOPMENT. BY INCLUDING REQUIREMENT-RELATED ATTRIBUTES IN THE DATA BASE, AUTOMATION CAN BE EXTENDED BEYOND TRACEABILITY. FOR EXAMPLE, SCHEDULE DATES FOR VARIOUS PROJECT EVENTS CAN BE INCLUDED, AND EVENTS SCHEDULED TO OCCUR DURING A SPECIFIED INTERVAL CAN BE ACCESSED, SORTED, AND PRINTED. COMPLETE FLEXIBILITY IS PROVIDED TO THE USER IN DETERMINING THE ATTRIBUTES TO BE INCLUDED IN THE DATA BASE.
DOCUMENTATION: USER'S MANUAL (80 PAGES)
DEVELOPER: LOCKHEED MISSILES AND SPACE CO., INC., SPACE SYSTEMS DIVISION
CONTACT: M. DORFMAN, LOCKHEED MISSILES AND SPACE CO., INC., 1111 LOCKHEED WAY, SUNNYVALE, CA, 94086, USA, 408-742-6308
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: ASA-PMS, TITLE: ASA PROJECT MANAGEMENT SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL PORTABLE: YES, TOOL SIZE: CORE: 30K-CDC,DEC, 200K-IBM
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE ASA PROJECT MANAGEMENT SYSTEM IS A SET OF COMPUTER PROGRAMS DEVELOPED TO AID PROJECT MANAGEMENT IN PLANNING AND CONTROLLING PROJECT SCHEDULES. IT IS UTILIZED IN CRITICAL PATH METHOD AND PRECEDENCE JOBS. IT IS DESIGNED AS A COMPLETE MANAGEMENT INFORMATION SYSTEM THAT INCLUDES PROJECT SCHEDULE COMPUTATION, COST CONTROL,

RESOURCE ALLOCATION, AND DIGITAL GRAPHICS. THE SCHEDULING PROGRAM IS USED TO MAINTAIN THE PROJECT DATA BASE, TO PERFORM NETWORK DIAGNOSTICS CHECKS, TO COMPUTE THE PROJECT SCHEDULE, AND TO PRINT A VARIETY OF REPORTS. FIVE PROGRAMS ARE INTERFACED WITH THE SCHEDULING PROGRAM: 1) THE COST PROGRAM IS DESIGNED TO COMPARE THE BUDGET ESTIMATES WITH THE ACTUAL COSTS AND TO EVALUATE THE COST AND PERFORMANCE OF THE PROJECT; 2) THE RESOURCE PROGRAM PRINTS RESOURCE LOADING PROGRAMS AND COMPUTES A FEASIBLE SCHEDULE BASED ON THE LIMITATIONS OF AVAILABLE RESOURCES; 3) THE MULTI-PROJECT PROGRAM COMBINES THE FILES OF SEVERAL PROJECTS AND PRINTS COMPANY-WIDE REPORTS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: ANDREW SIPES ASSOCIATES
CONTACT: ANDREW SIPES ASSOCIATES, 104 EAST 10TH STREET, NEW YORK, NY, 10016, USA, 212-986-6560
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: ASC, TITLE: AUTOMATED SYSTEM CHARTER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, CHARTS, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: ASC IS THE MOST ADVANCED, DYNAMIC REMEDY TO TODAY'S PRESSING NEED FOR EFFECTIVE SYSTEM COMMUNICATION AND DOCUMENTATION. THE VARIOUS HIGH LEVEL CHARTS AND REPORTS AUTOMATICALLY PRODUCED BY ASC CREATE A RELIABLE AND EXTENSIVE SYSTEM INFORMATION NETWORK. IN EFFECT, ASC AUTOMATES THE BURDEN OF PRODUCING AND MAINTAINING TIMELY SYSTEM- LEVEL DOCUMENTATION, WHILE SIMULTANEOUSLY UPGRADING ITS OVERALL QUALITY AND VALUE. FOR EXISTING SYSTEMS, ASC PERMITS THE USER TO EASILY OBTAIN CRITICALLY NEEDED SYSTEM DOCUMENTATION. SUCH INFORMATION IS ESSENTIAL TO A DISCIPLINED AND PRODUCTIVE APPROACH TO SYSTEM MAINTENANCE AND ENHANCEMENT. ASC IS ALSO A VALUABLE TO FOR NEW OR PROPOSED SYSTEMS, STARTING AT THE EARLIEST SPECIFICATION AND DESIGN STAGE. AS A SYSTEM EVOLVES, ASC WILL CONTINUALLY ASSURE THAT ALL DOCUMENTATION KEEPS PACE WITH ONGOING DEVELOPMENT ACTIVITY.
DEVELOPER: APPLIED DATA RESEARCH
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: ASEQ, TITLE: ASEQ
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, FORMATTING, USER OUTPUT, LISTINGS,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: ASEQ CAN BE USED DURING THE DEVELOPMENT OF FORTRAN CODE TO RESEQUENCE STATEMENT LABELS IN ASCENDING ORDER. NEW LABELS BEGIN AT 100 AND ARE INCREMENTED BY 10. LABELS ARE RIGHT-JUSTIFIED IN COLUMNS 2 THROUGH 5. ASEQ WILL PUNCH AND/OR LIST A NEW DECK.
DOCUMENTATION: USER'S MANUAL.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: ASRP, TITLE: AVIONICS SOFTWARE RELIABILITY PREDICTION
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, RELIABILITY ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 790000
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: A COMPUTER PROGRAM AND SUPPORTIVE DOCUMENTATION FOR IMPLEMENTING A MATHEMATICAL MODEL THAT PREDICTS THE RELIABILITY AND MEAN TIME TO FAILURE OF AN AVIONIC SOFTWARE DEVELOPMENT PROJECT IS AVAILABLE. THE MODEL IS BASED UPON ASSUMING DISCRETE VERSIONS OF THE SOFTWARE PROJECT BEING DEVELOPED, AN AVERAGE RATE OF ERROR OCCURRENCE PROPORTIONAL TO THE NUMBER OF ERRORS PRESENT AT ANY GIVEN TIME, AND ERRORS MAY BE DETECTED, CORRECTED AND GENERATED BETWEEN VERSIONS, ALTHOUGH ALL DETECTED ERRORS MAY NOT BE CORRECTED BETWEEN VERSIONS. THE COMPUTER PROGRAM USES A MODIFIED MARQUARDT NON-LINEAR SEARCH METHOD FOR PROVIDING LEAST SQUARES ESTIMATES OF THE PRINCIPAL MODEL PARAMETERS - THE NUMBER OF ERRORS INITIALLY PRESENT, THE PROPORTIONALITY CONSTANT RELATING THE ERROR DETECTION RATE TO THE NUMBER OF ERRORS PRESENT AT TIME T, AND THE PROPORTIONALITY CONSTANTS RELATING THE ERROR CORRECTION RATE TO THE ERROR DETECTION RATE AND THE NUMBER OF ERRORS AWAITING CORRECTION, RESPECTIVELY.
DOCUMENTATION: TECHNICAL REPORT (78)
REFERENCES: [RUSH00], C.K. RUSHFORTH, "SOFTWARE RELIABILITY ESTIMATION UNDER CONDITIONS OF INCOMPLETE INFORMATION", UNIV. OF UTAH, RADC FINAL TECHNICAL REPORT TO BE PUBLISHED, 0

DEVELOPER: UNIVERSITY OF UTAH
CONTACT: ALAN N. SUKERT, ROME AIR DEVELOPMENT CENTER (ISIS), GRIFFISS AIR FORCE BASE, NEW YORK, NY, 13441, USA, 315-330-2784
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: ASSET, TITLE: AUTOMATED SYSTEMS AND SOFTWARE ENGINEERING TECHNOLOGY
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, CONSISTENCY CHECKING, MANAGEMENT, CONFIGURATION MANAGEMENT, VERSION CONTROL, TEST DATA MANAGEMENT, LIBRARY MANAGEMENT, TRACKING,
STAGE OF DEVELOPMENT: DESIGN
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY
TOOL SUMMARY: ASSET IS AN INTEGRATED SYSTEM OF TOOLS AND TECHNIQUES WHICH IS DESIGNED TO FACILITATE THE TRANSITION FROM ONE DEVELOPMENT PHASE TO THE NEXT AND TO DETERMINE THAT THE TRANSITIONS HAVE BEEN MADE CORRECTLY. UPGRADING THE SYSTEM IN THE MAINTENANCE PHASE IS CONSIDERED TO BE A REITERATION OF THE DEVELOPMENT PHASE CODE). TESTING AND VERIFICATION ARE CONSIDERED TO BE A CONTINUING ACTIVITY THROUGHOUT THE DEVELOPMENT (OR MAINTENANCE) PROCESS RATHER THAN A SEPARATE PHASE. THE PRINCIPAL COMPONENT OF ASSET IS A CENTRAL DATA BASE CONTAINING ALL OF THE INFORMATION NEEDED FOR MAKING AND IMPLEMENTING MANAGEMENT DECISIONS ABOUT A PROGRAM. INCOMING SOURCE REPRESENTATIONS (CODE, DESIGN SPECIFICATIONS OR REQUIREMENT SPECIFICATIONS ARE FIST SCANNED BY A STATIC ANALYZER USING GRAPH ANALYSIS TECHNIQUES. SYMBOLIC EXECUTION IS APPLIED TO THE DESIGN AND REQUIREMENTS SPECIFICATION DYNAMIC ANALYSIS IS CONSIDERED TO BE THE MORE SUCCESSFUL VERIFICATION TECHNIQUE FOR SOURCE CODE. WHICH
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[OSTE78], L. J. OSTERWEIL, "ASSET: A LIFECYCLE VERIFICATION AND VISIBILITY SYSTEM", PROCEEDINGS COMPSAC, CHICAGO, IL, PP 30-35, 781100
DEVELOPER: BOEING COMPUTER SERVICES COMPANY
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: ASSIST-I, TITLE: ASSIST-I
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, ASSEMBLY LANGUAGE, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, SYMBOLIC EXECUTION, TRACING, LOGIC FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED

IMPLEMENTATION LANGUAGE: ASSEMBLY
COMPUTER (OTHER HARDWARE): XDS SIGMA X
TOOL SUMMARY: ASSIST-I IS A COMPUTER PROGRAM WHICH PERFORMS AUTOMATIC TESTS ON THE CORRECTNESS OF ARITHMETIC COMPUTATIONS, STORAGE REFERENCES, AND EXECUTION SEQUENCING WITHIN EVERY POSSIBLE LOGIC PATH OF THE COMPUTER PROGRAM UNDERGOING TEST. IT IS DESIGNED TO OPERATE ON ASSEMBLY LANGUAGE OBTAINED AS OUTPUT FROM A COMPILER OR CODED DIRECTLY IN ASSEMBLY LANGUAGE. THE BASIC CONCEPT OF ASSIST-I IS THAT EVERY COMPUTER PROGRAM CAN BE SECTIONED INTO LOGICAL TEST UNITS (LTU) WHICH CONSIST OF SERIALLY-EXECUTED STATEMENTS. ASSIST-I PROCESSES THE SUBJECT PROGRAM IN A SEQUENTIAL MANNER, RECORDING ALL BRANCHES OR POTENTIAL BRANCHES. AT THE END OF EACH LTU, ASSIST-I COMPARES THE COMPUTED RESULTS WITH THE PREDICTED RESULTS AND OUTPUTS AN ERROR MESSAGE INDICATING DISCREPANCIES, IF ANY. AT THE END OF THE SUBJECT PROGRAM, ASSIST-I LISTS EVERY POSSIBLE LOGIC PATH THROUGH THE PROGRAM BY LTU NAME.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: ATA-FASP, TITLE: AUTOMATED TEST ANALYZER-FASP
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, CMS-2, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, CMS-2, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): KRONOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: NAVAL AIR DEVELOPMENT CENTER
TOOL SUMMARY: THE ATA AUTOMATICALLY SCANS THE SOURCE PROGRAM, DETERMINES THE PATHS BETWEEN DECISION POINTS, AND INSTRUMENTS THE SOURCE CODE WITHOUT ALTERING THE INTENDED COMPUTATIONS. THE INSTRUMENTED PROGRAM IS THEN DYNAMICALLY EXECUTED WITH TEST DATA WHILE SPECIAL RUN-TIME ROUTINES RECORD DATA; THE DYNAMIC EXECUTION MAY BE ON THE SOFTWARE EMULATOR OR THE ACTUAL HARDWARE. THE RECORDED DATA IS POST-PROCESSED TO SHOW WHAT PATHS HAVE BEEN TESTED AS WELL AS THE FREQUENCY OF EXECUTION. THE RESULTANT STATISTICS ARE ACCUMULATED OVER MANY TESTS, FORMING A COMPLETE TEST PICTURE. A PROJECT MANAGER CAN ASSESS THE PROGRESS OF THE TESTING EFFORT AND HAS A QUANTITATIVE INDICATION OF THE RISK ASSOCIATED WITH RELEASING SOFTWARE WHICH IS NOT 100% TESTED. IN THIS CASE 100% TESTING MEANS ALL STATEMENTS HAVE BEEN EXECUTED AT LEAST ONCE. THE FREQUENCY OF

EXECUTION OF CERTAIN PATHS PROVIDES INFORMATION TO THE SOFTWARE ENGINEER FOR IMPROVING THE PERFORMANCE OF THE SOFTWARE.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: NAVAL AIR DEVELOPMENT CENTER
CONTACT: J. BERGEY, NAVAL AIR DEVELOPMENT CENTER, ADVAN. SOFT. TECH. DIV, CODE 503, WARMINSTER, PA, 18974, USA, 215-441-3145
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: ATA-SAI, TITLE: AUTOMATIC TESTING ANALYSIS TOOL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, ASSERTION CHECKING, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20
TOOL SUPPORTED: NO
TOOL SUMMARY: THE ATA IS AN AUTOMATED TOOL FOR THE DYNAMIC VERIFICATION OF FORTRAN AND ASSEMBLY LANGUAGE PROGRAMS. ATA ALLOWS THE USER TO GATHER STATISTICS ON THE CORRECTNESS OF ASSERTIONS DURING EXECUTION AND THE USAGE OF DECISION-TO-DECISION PATHS (DD PATHS). AN ASSERTION IS A STATEMENT THAT SPECIFIES A CONDITION OR RELATION ABOUT CERTAIN PROGRAM VARIABLES AND IS PLACED IN A PROGRAM IN THE FORM OF A COMMENT. A DD PATH IS A GROUP OF STATEMENTS THAT BEGINS WITH AN ENTRY POINT OR DECISION AND INCLUDES ALL STATEMENTS EXECUTED UNTIL THE NEXT DECISION OR EXIT POINT. OUTPUT OPTIONS PROVIDED BY ATA INCLUDE REPORTING TRUE OR FALSE ASSERTIONS, CUMULATIVE ASSERTION CHECKING, TRACING ASSERTION CHECKING, CUMULATIVE DD PATH USAGE, TRACING DD PATH USAGE, MODULE TRACING, AND SELECTIVE REPORTING.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: SCIENCE APPLICATION, INC.,
CONTACT: R. DOWNS, SCIENCE APPLICATION, INC., 1257 TASMAN DRIVE, SUNNYVALE, CA, 94086, USA, 408-734-4162
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: ATDG, TITLE: AUTOMATED TEST DATA GENERATOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, ERROR CHECKING, DYNAMIC ANALYSIS, CONSTRAINT EVALUATION,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: THE ATDG IS AN EXPERIMENTAL INTERACTIVE TOOL WITH TWO DIFFERENT FUNCTIONS: THE TEST DATA GENERATION (TDG) FUNCTION PROVIDES AUTOMATED SUPPORT TO PROGRAM TESTING AT THE UNIT LEVEL (I.E., A SINGLE SUB- ROUTINE, FUNCTION, OR MAIN PROGRAM) BY IDENTIFICATION OF EFFECTIVE TEST CASE PATHS AND THE DATA CONSTRAINTS WHICH MUST BE SATISFIED TO EXECUTE THESE PATHS; THE STATIC ERROR ANALYSIS (SEA) FUNCTION PROVIDES A DIAGNOSTIC CAPABILITY TO SUPPLEMENT THE ERROR DETECTION FUNCTIONS OF CONVENTIONAL FORTRAN COMPILERS BY IDENTIFICATION OF PATH-DEPENDENT ERRORS (E.G., UNINITIALIZED VARIABLES, INFINITE LOOPS, UNREACHABLE CODE). THESE TWO FUNCTIONS ARE PERFORMED BY ANALYZING A LOGIC NETWORK OF THE SOFTWARE ELEMENT USING THE PRINCIPLES OF DIRECTED GRAPH THEORY AND DYNAMIC PROGRAMMING. A NETWORK IS CONSTRUCTED BY DEFINING A SOFTWARE ELEMENT IN TERMS OF SEGMENTS (LOGIC BLOCKS OF FORTRAN STATEMENTS THAT CAN BE ADDRESSED), AND BY IDENTIFYING THE TRANSFERS AND CONNECTIVE PROPERTIES BETWEEN THESE SEGMENTS.
DOCUMENTATION: USER INFORMATION NOTE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: TRW
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG, RADC-TR-80-13, INTERIM REPORT

ACRONYM: ATTEST, TITLE: AUTOMATIC TEST ENHANCEMENT SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, TRANSFORMATION, INSTRUMENTATION, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, SYMBOLIC EXECUTION, PATH CONSTRAINT SOLUTION, DYNAMIC ANALYSIS, SYMBOLIC EXECUTION, PATH CONSTRAINT SOLUTION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN 66
COMPUTER (OTHER HARDWARE): DEC VAX-11
OS (OTHER SOFTWARE): VMS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: ATTEST IS A SYMBOLIC EXECUTION SYSTEM THAT DOES TEST DATA GENERATION AND ERROR ANALYSIS. IT IS COMPOSED OF 3 MAJOR COMPONENTS. THE PATH SELECTION COMPONENT MONITORS THE BRANCHES AND STATEMENTS THAT HAVE BEEN EXECUTED PREVIOUSLY AND DYNAMICALLY SELECTS PATHS TO EXERCISE UNTESTED PORTIONS OF THE CODE. THE SYMBOLIC EXECUTION COMPONENT CREATES SYMBOLIC REPRESENTATIONS OF THE

PROGRAM'S COMPUTATIONS AND DOMAIN, AS WELL AS CREATES SYMBOLIC REPRESENTATIONS OF ERROR CONDITIONS AND USER ENTERED ASSERTIONS. THE THIRD COMPONENT SIMPLIFIES THE SYMBOLIC REPRESENTATIONS AND TESTS FOR CONSISTENCY OF THE DOMAIN, FEASIBILITY OF THE ERROR CONDITIONS, AND VALIDITY OF THE ASSERTIONS. AFTER SUCCESSFUL ANALYSIS OF A PATH IS COMPLETED, TEST DATA TO CAUSE EXECUTION OF THE PATH IS GENERATED
DOCUMENTATION: TECHNICAL REPORTS
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[CLAR76], L. A. CLARKE, "A SYSTEM TO GENERATE TEST DATA AND SYMBOLICALLY EXECUTE PROGRAMS", IEEE TRANSACTIONS OF SOFTWARE ENGINEERING, SE-2, PP.215-222, 760900
[CLAR78], L. A. CLARKE, "AUTOMATIC TEST DATA SELECTION TECHNIQUES", INFOTECH STATE OF THE ART REPORT, SOFTWARE TESTING, VOL. 2, 780900
[CLAR78B], L. A. CLARKE, "TESTING: ACHIEVEMENTS AND FRUSTRATIONS", IEEE SECOND INTER. COMPUTER SOFTWARE AND APPLI. CONF., PP., 781100
DEVELOPER: DEPART. OF COMPUTER AND INFOR. SCIENCE
CONTACT: L. A. CLARKE, DEPART. OF COMPUTER AND INFOR. SCIENCE, UNIVERSITY OF MASSACHUSETTS, AMHERST, MA, 01003, USA, 413-545-1328
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS, RADC-TR-80-13, INTERIM REPORT

ACRONYM: AUDIT, TITLE: AUDIT
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 740000
IMPLEMENTATION LANGUAGE: FORTRAN CDC
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
PUBLIC DOMAIN: YES
TOOL SUMMARY: AUDIT IS PART OF A PROCUREMENT SYSTEM DEVELOPED BY THE NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER (NSRDC) TO EXAMINE CONTRACTOR PRODUCED COMPUTER PROGRAMS. AUDIT ANALYZES A FORTRAN PROGRAM TO INSURE THAT IT CONFORMS TO A SET OF PROGRAMMING STANDARDS AND ISSUES A REPORT DETAILING THE DEVIATIONS FROM THESE STANDARDS. THE AUDIT STANDARDS PRIMARILY INSURE PROGRAM UNIVERSALITY AMONG A CLASS OF COMPILERS AND ARE SIMILAR TO THE AMERICAN NATIONAL STANDARD FOR FORTRAN. AUDIT ALSO DETERMINES IF THE INPUT PROGRAM CONTAINS PATHS ALONG WHICH A VARIABLE MAY BE NEEDED BEFORE IT HAS BEEN DEFINED. TO DO THIS, AUDIT CONSTRUCTS A DIRECTED GRAPH OF THE FORTRAN PROGRAM AND TRACES EACH PATH OF THE GRAPH. A TOTAL FOR THE NUMBER OF PATHS THAT ARE TRACED FOR EACH MODULE IS ALSO PROVIDED.
DOCUMENTATION: TECHNICAL DESCRIPTION

REFERENCES: [CULP75], L. M. CULPEPPER, "A SYSTEM FOR RELIABLE SOFTWARE ENGINEERING", IEEE TRANS ON SOF ENG, 750600
DEVELOPER: NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER, BETHESDA, MD.
CONTACT: L. M. CULPEPPER, NAVAL SHIP RESEARCH AND DEVELOPMENT CTR, BETHESDA, MD, 20034, USA, 301-227-1887
INFORMATION SOURCE: DOD TECHNICAL REPORT

ACRONYM: AUDITOR, TITLE: AUDITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THE AUDITOR AUTOMATICALLY AUDITS FORTRAN PROGRAMS FOR COMPLIANCE WITH USER PROGRAMMING STANDARDS, POOR PROGRAMMING PRACTICES, NONPORTABLE CODE AND DEVIATIONS FROM THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) DEFINITION OF THE FORTRAN LANGUAGE. THIS TOOL ALSO GENERATES AUTOMATIC PROGRAM DOCUMENTATION. IN ADDITION, THIS PRODUCT IS A POWERFUL ERROR DETECTOR WHICH TYPICALLY DETECTS MANY ERRORS THAT ESCAPE COMMERCIAL COMPILERS. THIS TOOL REQUIRES NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. IT SIMPLY ACCEPTS AS INPUT FORTRAN SOURCE PROGRAMS AND OUTPUTS VARIOUS REPORTS. AN OPTION IS AVAILABLE THAT ALLOWS FORTRAN PROGRAMS FOR 16-BIT WORD MACHINES TO BE CHECKED ON MACHINES WITH 32-BIT WORDS. THIS PRODUCT POSSESSES A STRONG MANAGEMENT ORIENTATION AND SERVES AS AN EXCELLENT QUALITY ASSURANCE TOOL SINCE IT PRESENTS SIMPLE SUMMARIES AT THE END OF ITS CLEAR AND DETAILED OUTPUT.
DOCUMENTATION: USERS MANUAL, TECHNICAL REPORT
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: AUTDOC, TITLE: AUTOMATIC DOCUMENTER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN

COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: AUTDOC AUTOMATICALLY EXTRACTS AND PRINTS COMMON VARIABLE ALLOCATION AND IDENTIFICATION INFORMATION (SYMBOL, USE, DIMENSION, COMMON ARRAY, AND DEFINITION) AND LOCAL VARIABLE IDENTIFICATION INFORMATION (SYMBOL AND DEFINITION). USED IN CONJUNCTION WITH TEXT-ASSEMBLY PROGRAMS (E.G. DOCGEN), CROSS-REFERENCE DOCUMENTING PROGRAMS (E.G. FORREF, DEPCHT, CCREF, DPNDCY), AND FLOW-CHARTING PROGRAMS (E.G. FLOWGEN), IT RESULTS IN AUTOMATION OF MORE THAN HALF OF THE OVERALL DOCUMENTATION PROCESS.
DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: AUTO-DBO, TITLE: AUTOMATED DESIGN BY OBJECTIVES
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, TRANSLATION, EDITING, MACHINE OUTPUT, VHLL OUTPUT, DESIGN SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, INTERFACE ANALYSIS, COMPLETENESS CHECKING, CONSISTENCY CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL UCSD PASCAL
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): APPLE II (TWO FLOPPY DISK DRIVES)
TOOL SUMMARY: AUTO-DBO IS A RESEARCH PROJECT WITH THE OBJECTIVE OF EXPLORING THE LIMITS OF OUR UNDERSTANDING OF THE SOFTWARE ENGINEERING PROCESS. THE PRINCIPAL METHOD FOR EXPLORATION IS TO SEE HOW FAR WE CAN INSTRUCT A COMPUTER TO CARRY OUT THE SOFTWARE DESIGN PROCESS. ALSO OF INTEREST IS TO WHAT DEGREE A COMPUTER CAN GIVE OTHER TYPES OF HELP IN ADDITION TO ''DESIGN'' ITSELF: FOR EXAMPLE AS A STRUCTURED TEXT EDITOR, HELPING EVALUATE CONSEQUENCES OF CHANGES, MAKING MULTIPLE POINT CHANGES WITH LITTLE EFFORT, AND TEACHING THE DESIGN PROCESS. IT SHOULD BE STRESSED THAT THE DBO METHOD, AND THE AUTO-DBO TOOL IS CAPABLE OF CONSIDERING THE TOTAL SYSTEMS ENVIRONMENT (ORGANIZATIONAL FORMS, DOCUMENTATION DESIGN, DATA STRUCTURES AND BASES, HARDWARE, AND THE INTEGRATION OF THESE WITH SOFTWARE.)
DOCUMENTATION: TECHNICAL PAPER (300 PAGES), USERS GUIDE (60 PAGES)
DEVELOPER: TOM GILB, INDEPENDENT CONSULTANT
CONTACT: TOM GILB, INDEPENDENT EDP CONSULTANT, IVER HOLTERSVEI 2, KOLBOTN, N-1410, NORWAY, 47 2-80 16 97

INFORMATION SOURCE: TOOL FAIR

ACRONYM: AUTOCOM, TITLE: AUTOMATIC COMMON BLOCK INSERTION PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN IV, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE AUTOMATIC COMMON BLOCK INSERTION PROGRAM IS A TOOL FOR THE INSERTION OF COMMON BLOCKS IN FORTRAN SOFTWARE. THE AUTOCOM SYSTEM ALLOWS THE USER TO KEEP GLOBAL VARIABLES AND PROGRAM CODE IN SEPARATE FILES FOR UPDATE AND LISTING PURPOSES, AND AUTOMATICALLY INSERTS INTO PROGRAM CODE THOSE COMMON BLOCKS WHICH ARE NECESSARY, BASED UPON THE USE OF THE GLOBAL VARIABLES IN THE CODE. WITHOUT A MANAGING SYSTEM, COMMON BLOCKS ARE INSERTED MANUALLY BY THE USER, BASED UPON A VISUAL CHECK OF A ROUTINE'S GLOBAL VARIABLE USAGE. SUCH INSERTIONS ARE OFTEN IN ERROR; OMITTING NEEDED BLOCKS OR INSERTING ALL POSSIBLE BLOCKS TO INSURE GLOBAL VARIABLE COVERAGE. THE USE OF MOST AUTOMATED SYSTEMS REQUIRES THE INSERTION OF FLAGS WITHIN THE SOURCE CODE TO NOTE WHICH COMMON BLOCKS ARE DESIRED, AND REQUIRES THAT THE USER MONITOR THE STATUS OF THESE FLAGS DURING PROGRAM DEVELOPMENT. AUTOCOM RESOLVES THE ENTIRE QUESTION OF COMMON BLOCK MANAGEMENT TO AN AUTOMATED PROCESS.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPT.
CONTACT: P. W. BOGLE, TRW, SOFTWARE TECHNOLOGY DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: AUTOFLOW (TM), TITLE: AUTOFLOW (TM)
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, GRAPHICS, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH, INC.
TOOL SUMMARY: AUTOFLOW II ASSISTS IN THE DESIGN, DEBUGGING, MAINTENANCE, DOCUMENTATION, AND CONVERSION OF USER SOURCE PROGRAMS. THESE CAPABILITIES ARE PROVIDED THROUGH THE VARIOUS MODULE ANALYSIS PROCESSORS WHICH ANALYZE INPUT PROGRAM AND TRANSLATE ITS LOGIC INTO GRAPHIC FLOWCHARTS AND

NUMEROUS SUMMARY, CROSS-REFERENCED LISTINGS. MAP CAPABILITIES ARE PARTICULARLY USEFUL IN THE AREAS OF DEBUGGING, FLOWCHARTING, AND CROSS-REFERENCING. IN THE AREA OF DEBUGGING, EXTENSIVE COBOL/MAP CROSS-REFERENCE AND ANALYTICAL LISTINGS ARE PRODUCED, INCLUDING PROCEDURE DIVISION ANALYSIS AND CRITICAL VARIABLE ANALYSIS. ASSEMBLY LANGUAGE FLOWCHARTS ARE OBTAINED THROUGH EFFECTIVE USE OF CHART CODES AND COMPRESSION FACILITIES. THE EXTENSIVE CROSS-REFERENCING FACILITATES THE CORRELATION OF INPUT TO GENERATED OUTPUT, THEREBY QUICKLY ISOLATING PROBLEM AREAS.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: APPLIED DATA RESEARCH, INC.
CONTACT: JUDITH F. ARNOLD, APPLIED DATA RESEARCH, INC., ROUTE 206 AND ORCHARD ROAD, CN-8, PRINCETON, NJ, 08540, USA, 201-874-9100
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: AUTOFLOW/TRW, TITLE: AUTOFLOW/TRW
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, GRAPHICS, FLOW CHARTS, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: AUTOFLOW GENERATES PROGRAM FLOWCHARTS FROM FORTRAN SOURCE CARDS. COMMENTS WHICH OCCUR IN THE SOURCE CODE ARE TRANSFERRED TO THE FLOWCHART. THE FLOWCHARTS PRODUCED USING THE CALCOMP PLOT FEATURE ARE SIZED FOR 8-1/2 X 11 INCH PAPER, WITH CONNECTORS, CONTINUATION REMARKS, AND PAGE NUMBERS AUTOMATICALLY INSERTED.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SYSTEMS SOFTWARE DEPARTMENT
CONTACT: EDWARD N. SHINTO, TRW SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA,
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: AUTOIDEF0, TITLE: AUTOMATED ICAM DEFINITION LANGUAGE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, DESIGN SPECIFICATION, TRANSFORMATION, EDITING, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800100

IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: NO, TOOL SIZE: 140,000 OCTAL WORDS OF MEMORY
COMPUTER (OTHER HARDWARE): CDC CYBER (TEKTRONIX 4014 AND 4016 GRAPHICS TERMINALS), CDC 6X00/7X00 (TEKTRONIX 4014 AND 4016 GRAPHICS TERMINALS)
OS (OTHER SOFTWARE): NOS (PSR LEVELS 433,460,485; AIDS-STAGING GRAPHICS, IDBMS DATABASE SYSTEM)
TOOL SUPPORTED: YES, TOOL SUPPORT: AIR FORCE MATERIALS LAB, AFSC, WRIGHT-PATTERSON AFB, OHIO
TOOL SUMMARY: AUTOIDEF0 IS DESIGNED TO PROVIDE A DATABASE-SUPPORTED METHOD OF GRAPHICALLY MODELING SYSTEMS DEVELOPMENT. THE MAJOR PURPOSE OF THE TOOL IS TO MAINTAIN THE CONSTRUCTION AND EDITING OF DIAGRAMS WITHIN THE ICAM DEFINITION LANGUAGE (IDEF0) ACCORDING TO A USER'S SET OF SPECIFICATIONS, WHILE INCLUDING THE CAPABILITY OF VIEWING ANY IDEF0DIAGRAM FOLLOWING ITS CONSTRUCTION. FUTURE ENHANCEMENTS WILL ALLOW A USER TO COLLECT DIAGRAMS INTO A MODEL WHICH DESCRIBES A CERTAIN PORTION OR AN ENTIRE SYSTEMS DEVELOPMENT. ONCE A MODEL HAS BEEN CONSTRUCTED, AUTOIDEF0 WILL VALIDATE IDEF0 DIAGRAMS SEPARATELY AND AS A COLLECTION ACCORDING TO THE RESTRICTIONS IMPOSED BY THE ICAM DEFINITION LANGUAGE.
DOCUMENTATION: USER'S MANUAL (50), MAINTENANCE MANUAL (100), SYSTEM USER'S MANUAL (50)
REFERENCES: [BORA79], FRANK BORASZ, "AUTOIDEF: AN AUTOMATIC TOOL FOR SYSTEMS REQUIREMENTS DEFINITION", PROCEEDINGS OF COMPSAC 79, 791100
DEVELOPER: BOEING COMPUTER SERVICES COMPANY, SOFTECH, INC., WALTHAM, MASS.
CONTACT: BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346 M/S 9C-03, SEATTLE, WA, 98124, USA, 206-575-5114
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: AUTOMATIC DOCUM, TITLE: AUTOMATIC DOCUMENTATION SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, TRANSFORMATION, FORMATTING, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 52000
COMPUTER (OTHER HARDWARE): CDC CYBER
OS (OTHER SOFTWARE): NOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUMMARY: ALLOWS FOR SOFTWARE DOCUMENTATION TO BE EMBEDDED IN THE CODE AS COMMENTS. INCLUDES PARAGRAPHING, LINE SKIPPING, PAGE EJECT, AND DOCUMENT FORMATTING CAPABILITY. THE USER MAY DEFINE HIS/HER OWN DOCUMENTATION LINE DESIGNATION CHARACTERS, AND MAY SELECTIVELY SPECIFY WHICH ROUTINES ARE TO BE PROCESSED FOR DOCUMENTATION BY THE ADS.

DOCUMENTATION: USER'S MANUAL
REFERENCES: [FRAN78], FRANZ, W.R., "AUTOMATIC DOCUMENTATION SYSTEM (ADS)", GENERAL DYNAMICS POMONA DIVISION MEMORANDUM 577-0-0161A, 781013
DEVELOPER: GENERAL DYNAMICS
CONTACT: RICHARD W. MC HARD, GENERAL DYNAMICS, P.O. BOX 2507, POMONA, CA, 91766, USA, 714-629-5111
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: AUTORETEST, TITLE: AUTORETEST
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, TEST DATA MANAGEMENT, DYNAMIC ANALYSIS, REGRESSION TESTING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV, ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE PRINCIPAL APPLICATION OF THE AUTORETEST PROGRAM IS THE AUTOMATION OF USER SOFTWARE TEST RESULTS REVALIDATION. THE SYSTEM PROVIDES AN AUTOMATED COMPARISON BETWEEN SELECTED OLD AND NEW TEST PARAMETERS, THEREBY ALLOWING INVALUABLE DOCUMENTATION OF THE TEST CASES. THIS SYSTEM ALSO PROVIDES A FLEXIBILITY IN THAT A TOLERANCE CRITERION MAY BE ASSIGNED TO EACH COMPARISON AND THEREBY SUPPRESS INSIGNIFICANT DIFFERENCES. THIS IS SIMILAR TO THE DRIVER TOOL AVAILABLE FOR THE CDC COMPUTERS.
DOCUMENTATION: DEVELOPMENT SPECIFICATION, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: CLARK LUCAS, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0426
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: BEST/1 (TM), TITLE: AN INTERACTIVE SYSTEM PERFORMANCE MODELING PACKAGE
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, MANAGEMENT, PERFORMANCE MANAGEMENT, CAPACITY PLANNING, DYNAMIC ANALYSIS, SIMULATION, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780300
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: BGS SYSTEMS, INC.
TOOL SUMMARY: BEST/1 (TM) IS USED TO PREDICT THE RESPONSE TIME AND THROUGHPUT IMPACT FOR EACH WORKLOAD DUE TO CHANGES IN WORKLOAD VOLUME, HARDWARE CONFIGURATION UPGRADES, AND ADJUSTMENT OF OPERATING SYSTEM PARAMETERS. BEST/1 IS BASED

ON QUEUING NETWORK THEORY AND INCLUDES PROPRIETARY EXTENSIONS FOR EFFICIENTLY ANALYZING REALISTIC ASPECTS OF COMPUTER SYSTEMS. FOR EXAMPLE, BEST/1 CAN MODEL PRIORITY SCHEDULING AT THE CPU OR SEPARATED MEMORY QUEUES FOR EACH TIME SHARING AND TRANSACTION PROCESSING WORKLOAD. THE BEST/1 USER IS FULLY INSULATED FROM MATHEMATICAL DETAILS AND INSTEAD FORMULATES MODELS INTERACTIVELY IN TERMS OF COMPUTER SYSTEM CONCEPTS SUCH AS WORKLOADS (UP TO 10), MULTIPROGRAMMING LEVELS, I/O CHANNELS, AND TRANSACTION VOLUMES. FIFTEEN SEPARATE OUTPUT REPORTS LIST THROUGHPUTS, RESPONSE TIMES, UTILIZATIONS, AND OTHER FACTORS IMPORTANT FOR CAPACITY PLANNING AND SYSTEM TUNING.
DOCUMENTATION: USER'S GUIDE (223 PAGES)
REFERENCES: [BGSS80], BGS SYSTEMS, INC., "AN INTEGRATED APPROACH TO CAPACITY PLANNING", PROC OF 8TH EUROPEAN CONF ON COMP MEAS, LONDON, ENGLAND, 801000
DEVELOPER: BGS SYSTEMS, INC.
CONTACT: BGS SYSTEMS, INC., 1 UNIVERSITY OFFICE PARK, WALTHAM, MA, 02254, USA, 617-891-0000
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: BLKGEN-BDD, TITLE: BLKGEN
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM READS VARIABLE NAMES AND THEIR DIMENSIONS AND USES THIS INFORMATION TO PUNCH A DIRECTORY FOR THE DIRCOM PROGRAM AND ALSO FOR THOSE PROGRAMS WHICH USE THE SDF TYPE OF INPUT.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: BRUNSWICK DEFENSE DIV.
CONTACT: JAMES N. CHURCHYARD, BRUNSWICK DEFENSE DIV., 3333 HARBOR BLVD., COSTA MESA, CA, 92626, USA, 714-546-8030
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: BLKGEN/SPECPN, TITLE: COMMON DATA BASE MANAGEMENT SUBSYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, MACHINE OUTPUT, SOURCE CODE OUTPUT, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, VERSION CONTROL, DATA BASE MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX

TOOL SUMMARY: BLKGEN AND SPECPN DEFINE AND MAINTAIN SUBROUTINE COMMON DATA STRUCTURES DURING DEVELOPMENT AND MAINTENANCE PHASES OF LARGE FORTRAN-ORIENTED PROGRAMS. THE TWO PRIMARY FUNCTIONS OF THESE PROGRAMS ARE: GENERATION AND MAINTENANCE OF A PROGRAM COMMON DATA BASE, AND AUTOMATIC UPDATING OF THE SOURCE CODE TAPE FROM SUCH A DATA BASE. UTILIZING THE AUTOMATIC COMMON UPDATE FEATURE OF THE PROGRAM, A LARGE AMOUNT OF ADDITIONAL CODE MODIFICATIONS AND ASSOCIATED COMMON DATA CAN BE COORDINATED BY COMBINING ALL COMMON VARIABLES INTO THE MASTER COMMON, THEN EXECUTING CDBM SOFTWARE (INCLUDING BLKGEN AND SPECPN), THUS GENERATING AN UPDATED VERSION OF THE PROGRAM THAT IS FREE OF COMMON INCONSISTENCIES.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: BSC, TITLE: BASIC STATISTICS COLLECTOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, BASIC, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 760000
IMPLEMENTATION LANGUAGE: PL/1
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): MULTICS
TOOL AVAILABLE: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THE BASIC STATISTICS COLLECTOR IS A GROUP OF PROGRAMS WRITTEN IN THE PL PROGRAMMING LANGUAGE AND RESIDING ON THE HIS 6180 MULTICS SYSTEM AT RADC. THIS TOOL FOR THE BASIC PROGRAMMING LANGUAGE IS AN INITIAL ATTEMPT TO DEVELOP A METHOD FOR COLLECTING AND ANALYZING DATA ON THE GENERAL USAGE OF THE BASIC LANGUAGE. THE TOOL PROCESSES PROGRAMS WRITTEN IN BASIC AND STORES THE GENERAL LANGUAGE USE DATA, COLLECTED FROM PROGRAMS, IN A CENTRAL DATA FILE WHICH CONTAINS CUMULATIVE DATA FROM ALL PROCESSED PROGRAMS.
DOCUMENTATION: TECHNICAL PAPER (54), RADC TR-76-9, NTIS ACCESSION NO. A023-49(54), RADC TR-76-9, NTIS ACCESS. NO. A023-494 (54)
REFERENCES: [RADC76], RADC, "BASIC STATISTICS COLLECTOR", RADC-TR-76-9, NTIS ACCESS. NO. A023-494, 760000
DEVELOPER: ROME AIR DEVELOPMENT CENTER (ISIE)
CONTACT: DOUGLAS A. WHITE, ROME AIR DEVELOPMENT CENTER (ISIE), GRIFFISS AIR FORCE BASE, NY, 13441, USA, 315-330-2748

INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: BUDGET VS ACTUA, TITLE: BUDGET VS. ACTUALS PLOT PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, ACTIVITY DIAGRAM, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THIS PROGRAM PLOTS ACTUAL WEEKLY EXPENDITURES VS. BUDGET WITH VARIANCES NOTED. A SPECIAL FEATURE OF THE PROGRAM IS THAT IT IS BUILT ACCORDING TO THE WORK BREAKDOWN STRUCTURE (WBS). OUTPUT IS AT ANY WBS LEVEL DESIRED. THE ORIGINAL INPUT MUST INCLUDE THE CONTRACT START AND END DATE, THE WORK UNIT OR WBS ELEMENT, BUDGET START AND END DATE, AND THE WEEKLY BUDGET AMOUNT. WEEKLY INPUTS OF ACTUALS FROM THIS POINT ON IS ALL THAT IS REQUIRED.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
CONTACT: TOM KAMPE, TRW, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0580
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CA, TITLE: FORTRAN CODE AUDITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, PCL, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE FORTRAN CODE AUDITOR PROGRAM EXAMINES FORTRAN SOURCE CODE FOR ADHERENCE TO A PREDEFINED SET OF 34 SOFTWARE STANDARDS. IT WAS DEVELOPED FOR USE ON THE SYSTEMS TECHNOLOGY PROGRAM, BUT MOST STANDARDS CAN BE APPLIED TO ANY FORTRAN PROGRAM. CODE AUDITOR IS HEAVILY USED BY BOTH PROGRAMMERS AND QUALITY ASSURANCE ENGINEERS. IT HAS BEEN A VALUABLE TOOL BECAUSE IT PERMITS THE ENFORCEMENT OF A COMPREHENSIVE SET OF CODING STANDARDS WHICH REDUCES THE NUMBER OF SOFTWARE ERRORS, IMPROVES EXECUTION EFFICIENCY, AND IMPROVES READABILITY AND MAINTAINABILITY. THE FORTRAN CODE AUDITOR ACCEPTS EITHER FORTRAN OR PROCESS CONSTRUCTION LANGUAGE (PCL) CODE. IT CAN HANDLE UP TO 300 ROUTINES PER RUN PROCESSING ONE AT A TIME. THE STANDARD OUTPUT INCLUDES: A LISTING OF ALL CODE AUDITOR STANDARDS; A LIST OF THE USER'S SOURCE CODE ANNOTATED WITH ANY STANDARD VIOLATIONS; A SUMMARY PAGE FOR EACH ROUTINE LISTING ANY VIOLATIONS AND IDENTIFYING THEIR ASSOCIATED CARD NUMBERS.

DOCUMENTATION: USER'S MANUAL, TEST ANALYSIS REPORT, DESIGN SPECIFICATION,, REQUIREMENTS SPECIFICATION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CADA, TITLE: COBOL AUDIT AND DEBUG AID
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: CORE: 75000
COMPUTER (OTHER HARDWARE): CDC CYBER
OS (OTHER SOFTWARE): SCOPE 3.4
TOOL AVAILABLE: YES
TOOL SUMMARY: A COBOL PRE-COMPILER THAT PROVIDES THE PROGRAMMER WITH A TOOL TO IDENTIFY HIGH ACTIVITY PATHS BY OBTAINING THE NUMBER OF EXECUTIONS TO EACH COBOL PARAGRAPH. IT WILL ALSO IDENTIFY THE SOURCE CODE THAT WAS NOT EXECUTED.
DOCUMENTATION: TECHNICAL PAPER
DEVELOPER: USAF/ALC
CONTACT: BILL SHIRLEY, USAF/ALC, SM-ALC/ACDAB, BLDG 2698, MCCLELLAN AFB, CA, 95652, USA, 916-643-3642
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: CADMUS, TITLE: COMPREHENSIVE AUTOMATED DOCUMENT MAINTENANCE AND UPDATE SYS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, SLEUTH
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: CADMUS PROCESSES SOURCE DECKS TO EXTRACT PROGRAM DOCUMENTATION. COMMENT CARDS, IDENTIFIED BY KEYWORDS, ARE EXTRACTED FROM THE SOURCE FILE AND REFORMATTED FOR PRINTING. A TABLE OF CONTENTS IS ALSO PREPARED. IN ADDITION, CROSS INDICES OF PROGRAM LIBRARIES AND N-SQUARED CHARTS ARE PREPARED. ESTIMATED SAVINGS OF A PERSON HALF-TIME. ADDITIONAL OUTPUT IS PROVIDED THAT WOULD NEVER HAVE BEEN ATTEMPTED, OTHERWISE.

DOCUMENTATION: PROGRAM SPECIFICATION, USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CADSAT, TITLE: COMPUTER-AIDED DESIGN AND SPECIFICATION TOOL
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, URL, REQUIREMENTS LANGUAGE, USER OUTPUT, GRAPHICS, LISTINGS, STATIC ANALYSIS, COMPLETENESS CHECKING, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 3033
OS (OTHER SOFTWARE): OS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: NO
TOOL SUMMARY: THE COMPUTER-AIDED DESIGN AND SPECIFICATION ANALYSIS TOOL (CADSAT) IS A TOOL FOR DESCRIBING THE REQUIREMENTS FOR INFORMATION PROCESSING SYSTEMS AND RECORDING SUCH DESCRIPTIONS IN MACHINE-PROCESSABLE FORM. THESE REQUIREMENTS ARE INTENDED TO BE USED AS INPUT TO THE DESIGN AND CONSTRUCTION PHASES OF THE SYSTEM LIFE CYCLE. THE TWO MAJOR COMPONENTS OF CADSAT ARE THE USER REQUIREMENTS LANGUAGE (URL) AND THE USER REQUIREMENTS ANALYZER (URA). URL IS THAT PART OF CADSAT WHICH IS USED TO DESCRIBE AN INFORMATION PROCESSING SYSTEM IN FORMAL LANGUAGE. URA IS THE SOFTWARE WHICH RECORDS THE URL DESCRIPTION IN THE DATA BASE AND PERFORMS ANALYSIS ON THE DESCRIPTION.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: U.S. AIR FORCE, ELECTRONIC SYSTEMS DIV., HANSCOM FIELD, MA., 01731
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: CALLREF, TITLE: CALLREF
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, OBJECT CODE INPUT, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, BAL

COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: CALLREF PROGRAM PROCESSES THE OBJECT DECKS FOR ALL THE ROUTINES OF AN IBM 360/370 PROGRAM AND CREATES A READABLE AND USEFUL PRINTOUT CROSS-REFERENCE AND CALLING TREE OF THE COMMON BLOCKS AND SUBROUTINE USES. CALLREF USES THE OBJECT DECKS OF THE 360/370 PROGRAM, SO IT CAN CROSS REFERENCE ALL OF THE PROGRAM ROUTINES AND COMMON, INDEPENDENT OF THEIR SOURCE LANGUAGE.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPT.
CONTACT: TOM HEIM, TRW, DEFENSE SYSTEMS SOFTWARE DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-2884
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CAPTURE/MVS(TM), TITLE: A PERFORMANCE ANALYSIS AND REPORTING PACKAGE FOR IBM MVS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, CHARTS, TABLES, STATIC ANALYSIS, MANAGEMENT, PERFORMANCE MANAGEMENT, CAPACITY PLANNING, DYNAMIC ANALYSIS, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800300
TOOL PORTABLE: YES
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: BGS SYSTEMS, INC.
TOOL SUMMARY: CAPTURE/MVS PROCESSES SMF/RMF RECORDS PRODUCED BY OS/MVS TO DEVELOP INFORMATION FOR DETERMINING CAPTURE RATIOS IN CPU SIZING STUDIES, FOR IDENTIFYING HIGH-OVERHEAD AREAS FOR TUNING APPLICATIONS, AND FOR DEVELOPING REPRESENTATIVE BASELINES FOR CAPACITY PLANNING STUDIES USING EITHER BENCHMARKS OR MODELS. THE PACKAGE SEPARATES TOTAL PROCESSING ACTIVITY DURING ANY USER-SELECTED INTERVAL INTO DISTINCT WORKLOADS REPRESENTING BATCH, TSO, IMS CICS, AND OTHER CATEGORIES. REPORTS PRODUCED BY CAPTURE/MVS CONTAIN SUCH INFORMATION AS: (1) OVERHEAD LOADS ON CPU'S, I/O DEVICES, AND CHANNELS FOR SUCH SYSTEM FUNCTIONS AS PAGING, SWAPPING AND I/O INTERRUPT HANDLING; (2) PER-WORK-LOAD BREAKDOWNS OF OVERHEAD TIME FOR BATCH, TSO, AND OTHER WORK-LOAD CATEGORIES; (3) CAPTURE RATIOS FOR EACH WORKLOAD WITH OPTIONS FOR INCLUDING TELECOMMUNICATIONS OVERHEAD, SPOOLING, AND THE LIKE; (4) ACTIVITY PROFILES FOR EACH WORKLOAD THAT INDICATE THE TOTAL SERVICE TIME PER TRANSACTION AT EACH DEVICE AND PROCESSOR.
DOCUMENTATION: USER'S GUIDE (130 PAGES)

DEVELOPER: BGS SYSTEMS, INC.
CONTACT: BGS SYSTEMS, INC., 1 UNIVERSITY OFFICE PARK, WALTHAM, MA, 02254, USA, 617-891-0000
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: CARA, TITLE: COMPUTER AIDED REQUIREMENTS ANALYSIS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, URL, REQUIREMENTS LANGUAGE, USER REQUIREMENTS LANGUAGE, TRANSFORMATION, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, CONSISTENCY CHECKING, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
TOOL SUMMARY: CARA IS A SOFTWARE TOOL WHICH FACILITATES THE TASK OF TRANSLATING THE SOFTWARE REQUIREMENTS INTO THE SOFTWARE DESIGN. THE TOOL USES THE USER REQUIREMENTS LANGUAGE (URL) AS THE MEANS OF PRESENTING THE SOFTWARE DESIGN PROPERTIES AND CHARACTERISTICS. THE DATA EXPRESSED IN URL IS ENTERED INTO A COMPUTERIZED DATA BASE INCREMENTALLY AS IT IS OBTAINED, OR IN BATCHES AS DESIRED. AS IT IS ENTERED, THE USER REQUIREMENT ANALYZER (URA) CHECKS FOR CORRECTNESS AND CONSISTENCY WITH THAT ALREADY IN THE DATA BASE. UPON REQUEST, URA WILL PRODUCE REPORTS ON ALL OR ANY SELECTED PART OF THE DATA IN THE DATA BASE. THE DATA MAY HAVE BEEN ENTERED BY DIFFERENT ANALYSTS AT DIFFERENT TIMES. DURING THE PRODUCTION OF A REPORT, URA CARRIES OUT NUMEROUS CHECKS AND ANALYSES AND PRODUCES WARNINGS AND DIAGNOSTICS AS APPROPRIATE. WHEN PROJECT IS COMPLETE, COPIES OF THE VARIOUS REPORTS CAN BE PRODUCED AND ASSEMBLED TO MEET THE FORMAT OF THE FINAL SPECIFICATION DOCUMENT REQUIRED BY THE ORGANIZATION.
DOCUMENTATION: USER'S MANUAL, PROGRAM MAINTENANCE MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SYSTEM DEVELOPMENT DEPARTMENT
CONTACT: KATHLEEN MAPES, TRW, SYSTEM DEVELOPMENT DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3620
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CASEGEN, TITLE: CASEGEN
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, SYMBOLIC EXECUTION, PATH CONSTRAINT SOLUTION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SUMMARY: CASEGEN IS DESIGNED TO GENERATE TEST DATA AUTOMATICALLY FOR TESTING FORT PROGRAMS. IT CONSISTS OF FOUR MAJOR SUBSYSTEMS: FORTRAN SOURCE CODE PROCESSOR,

PATH GENERATOR. PATH CONSTRAINT GENERATOR. TEST DATA GENERATOR FSCP GENERATES A DATA BASE CONSISTING OF THE PROGRAM GRAPH, THE SYMBOL TABLE AND THE INTERNAL REPRESENTATION OF THE SOURCE CODE. THE PATH GENERATOR, BY PARTITIONING THE PROGRAM GRAPH, GENERATES A MINIMAL SET OF PATHS TO COVER ALL EDGES. THE PATH CONSTRAINT GENERATOR USES SYMBOLIC EXECUTION TO PRODUCE A SET OF EQUALITY AND INEQUALITY CONSTRAINTS ON THE INPUT VARIABLES. THE TEST DATA GENERATOR CREATES A SET OF INPUTS WHICH SATISFY THE CONSTRAINTS AND CAN BE USED TO EXECUTE THE PROGRAM PATH. THE CONSTRAINTS ARE SOLVED BY MEANS OF RANDOM NUMBER GENERATION AND SYSTEMATIC TRIAL AND ERROR PROCEDURES, WITH VALUES BEING ASSIGNED TO PROGRAM VARIABLES UNTIL ALL CONSTRAINTS ARE SATISFIED.
REFERENCES: [RAMA75], C. V. RAMAMOORTHY, "TECHNIQUES FOR AUTOMATED TEST DATA GENERATION", PROCEEDINGS NINTH ASILOMAR CONF. ON CIRCUITS, SYS. AND COMP., 751100
[RAMA76], C. V. RAMAMOORTHY, "ON THE AUTOMATED GENERATION OF PROGRAM TEST DATA", IEEE TRANSACTIONS ON SOFTWARE ENG., VOL. 2E-2, PP 293-300, 761200
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: CAVS, TITLE: COBOL AUTOMATED VERIFICATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, RESTRUCTURING, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE, STATISTICAL ANALYSIS, PROFILE GENERATION, STRUCTURE CHECKING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, ASSERTION CHECKING, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL PORTABLE: YES
TOOL AVAILABLE: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: CAVS, A SOFTWARE TOOL, IS BEING DEVELOPED TO ASSURE THAT SOFTWARE SYSTEMS WRITTEN IN COBOL CAN BE STRUCTURALLY ANALYZED, DOCUMENTED, AND COMPREHENSIVELY TESTED. CAVS WILL PROVIDE: (1) SELECTIVE GENERATION OF AUTOMATED REPORTS RESULTING FROM SOURCE CODE STATIC ANALYSIS; (2) THE ABILITY TO SELECTIVELY INSTRUMENT COBOL SOURCE CODE AND ACCOMODATE COVERAGE AND PROCESSING TIME DATA IN THE DYNAMIC ANALYSIS MODE; (3) THE CAPABILITY OF INTRODUCING USER-DEFINED ASSERTIONS (INPUT/OUTPUT, UNITS AND LOGICAL ASSERTIONS) TO VERIFY PROGRAM CONSISTENCY/ACCURACY; (4) POST- EXECUTION ANALYSIS AND TEST CASE ASSISTANCE ON AN INDIVIDUAL (AS WELL AS CUMULATIVE) TEST CASE BASIS.
DOCUMENTATION: TECHNICAL PAPER, USER MANUAL, MAINTENANCE MANUAL, SPECIFICATION, TEST/PLAN PROCEDURE

CONTACT: LAWRENCE M. LOMBARDO, ROME AIR DEVELOPMENT CENTER/ISIE, GRIFFISS AFB, NY, 13441, USA, 315-330-7834
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: CBLSHORT, TITLE: A COBOL PRECOMPILER
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 650000
IMPLEMENTATION LANGUAGE: COBOL ANS
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: GENERAL ELECTRONICS
TOOL SUMMARY: CBLSHORT IS A VALUABLE PROGRAMMING AID BECAUSE: (1) CBLSHORT SHARPLY REDUCES THE TEDIOUS ERROR-PRONE LONGHAND OF COBOL PROGRAMMING BY ALLOWING THE PROGRAMMER TO USE SHORTHAND ABBREVIATIONS. (2) CBLSHORT PROVIDES FULLY EXPANDED COBOL SOURCE PROGRAMS WITH SOURCE LISTING RE-ALIGNED FOR MAXIMUM READABILITY. (3) CBLSHORT ABBREVIATIONS ARE DYNAMICALLY ALTERABLE BY THE USER WHO WISHES TO EXPAND THE STANDARD SET SUPPLIED. (4) CBLSHORT MAKES MAINTENANCE OF PROGRAMS EASIER SINCE UNLIKE MANY OTHER PRE-COMPILERS, YOU DO NOT HAVE TO USE ABBREVIATIONS. EXISTING PROGRAMS ARE ACCEPTED AS INPUT AND ARE REFORMATTED FOR EASIER READING. CBLSHORT PROCESSES THE INPUT SOURCE PROGRAMS, REPLACING ANY ABBREVIATIONS WHERE NECESSARY. THE IDENTIFICATION AND ENVIRONMENT DIVISION USUALLY REQUIRE FEW CHANGES, WHILE THE DATA AND PROCEDURE DIVISIONS ARE THE MAJOR AREAS OF CHANGE.
DEVELOPER: GENERAL ELECTRONICS
CONTACT: GENERAL ELECTRONICS, PO BOX 79, LYONS, IL, 60534, USA, 312-447-2797
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: CCA, TITLE: COMPASS CODE AUDITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COMPASS, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE COMPASS CODE AUDITOR AUDITS CDC COMPASS CODE FOR ADHERENCE TO 12 SOFTWARE STANDARDS. THE STANDARDS REFER PRIMARILY TO PREFACE COMMENTARY BLOCKS, IN-LINE COMMENTS, COLUMNAR RESTRICTIONS, AND INSTRUCTION TYPES. THE COMPASS CODE AUDITOR CAN HANDLE UP TO 300 ROUTINES PER RUN, AND ANY SUBSET OF CODING STANDARDS MAY BE SELECTIVELY SUPPRESSED AT THE USER'S OPTION. THE STANDARD OUTPUT INCLUDES: A LIST OF ALL COMPASS CODE AUDITOR STANDARDS; A LIST OF THE USER'S COMPASS CODE ANNOTATED WITH ANY STANDARD VIOLATIONS; A SUMMARY PAGE FOR EACH ROUTINE LISTING ANY

VIOLATIONS AND IDENTIFYING THEIR ASSOCIATED CARD NUMBERS; A MANAGEMENT SUMMARY LISTING EACH ROUTINE NAME, THE NUMBER OF EXECUTABLE STATEMENTS, THE NUMBER OF TOTAL CARD IMAGES, THE NUMBER OF STANDARD VIOLATIONS, AND A PERFORMANCE INDEX.
DOCUMENTATION: USER'S MANUAL, TEST ANALYSIS REPORT, REQUIREMENTS MANUAL, DESIGN MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CCREF, TITLE: CCREF
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: CCREF AIDS IN THE TASK OF VERIFYING THE ACCURACY OF THE COMMON DATA BASE AS IT EXISTS ON A GIVEN SOURCE CODE TAPE. SEVERAL DISPLAYS ARE PRODUCED WHICH ENABLE THE PROGRAMMER TO QUICKLY IDENTIFY INCONSISTENCIES FOUND IN THE STORAGE AND ALLOCATION OF ALL COMMON VARIABLES IN THE PROGRAM. CCREF PROCESSES ALL FORTRAN ELEMENTS CONTAINING COMMON VARIABLES AND OPTIONALLY PRODUCES ANY OF THE FOLLOWING DISPLAYS: ALPHABETICAL CROSS-REFERENCE OF COMMON BLOCKS VS. SYMBOLIC ELEMENTS IN WHICH THEY APPEAR, AND VICE VERSA; CROSS-REFERENCE OF INDIVIDUAL CELLS OF EACH COMMON ARRAY VS. THE SYMBOLIC ELEMENTS IN WHICH THEY OCCUR; A COMPLETE ALPHABETICAL CROSS-REFERENCE OF ALL COMMON VARIABLES VS. THE SYMBOLIC ELEMENTS AND COMMON BLOCKS IN WHICH THEY APPEAR. CCREF OUTPUT IS VERY HELPFUL IN THE MAINTENANCE AND DEVELOPMENT OF LARGE COMPUTER PROGRAMS WHOSE COMMON STRUCTURE IS FREQUENTLY CHANGED.
DOCUMENTATION: COMGEN USER'S GUIDE, 72-FMT-892, COMGEN PROGRAMMER'S GUIDE, 72-FMT-902
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CCS, TITLE: CHANGE CONTROL SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING

FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON, MANAGEMENT, CONFIGURATION MANAGEMENT, CHANGE CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 770100
COMPUTER (OTHER HARDWARE): NO. 1 ESS
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: BELL LABORATORIES
TOOL SUMMARY: THE MAJOR FUNCTIONS OF CSS ARE: CONTROLS APPLICATION AND APPROVAL STATUS FOR PROGRAM SOURCE CHANGES. GENERATES AND MAINTAINS OBJECT CODE CHANGES. PERMITS EARLY SOURCE CODE CHANGES. DETERMINES CHANGE DEPENDENCIES AND ENFORCES CONCURRENT PROCESSING. SUPPORTS CONTINUOUS INTEGRATION OF RELEASES IN SEQUENCE. PERMITS IDENTIFICATION OF ALTERNATIVE SYSTEM VERSIONS. PROVIDES LANGUAGE/COMPILER INDEPENDENT PROCESSES. MAINTAINS CENTRAL, ADMINISTRATIVE DATA BASE. PROVIDES STANDARD ADMINISTRATIVE SYNTAX. THROUGH THE USE OF CCS PROGRAMMERS HAVE ACCESS TO A STANDARD SET OF SUPPORT PROGRAMS INCLUDING COMPILERS, EDITORS, AND LOADERS FOR IMPLEMENTING MODIFICATIONS AND UPDATES TO NO. 1 ESS. CCS IS A PROGRAMMING SUPPORT SYSTEM PROVIDING AN INTERFACE BETWEEN PRODUCTION AND MAINTENANCE PROGRAMMERS AND THE NO. 1 ELECTRONIC SWITCHING SYSTEM (ESS) SOFTWARE. NO. 1 ESS IS AN EXTREMELY LARGE, COMPLEX SYSTEM OPERATING IN A VERY DYNAMIC ENVIRONMENT.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[BAUE78], H. A. BAUER, "MANAGING LARGE-SCALE SOFTWARE DEVELOPMENT WITH AN AUTO CHANGE CONTROL", PROCEEDINGS COMPSAC 1978, CHICAGO, IL, PP 13-17., 781100
DEVELOPER: BELL LABORATORIES
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: CENSUS, TITLE: CENSUS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 25K
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): ECL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: TO READ FORTRAN SOURCE TEXT AND PRODUCE A REPORT GIVING THE NUMBER OF OCCURRENCES OF ALL OPERANDS, OPERATORS, LANGUAGE PRIMITIVES, AND STRUCTURES ENCOUNTERED IN THE TEXT. THE PURPOSE OF THIS DATA IS ANALYSIS OF PROGRAMS FROM A SOFTWARE SCIENCE POINT-OF-VIEW, TO LEARN HOW TO MEASURE PROGRAM COMPLEXITY AND LOCATE PROGRAM INVARIANTS.
DOCUMENTATION: USER'S MANUAL

DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: CGJA, TITLE: JOVIAL J3 COARSE GRAIN ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, JOVIAL, DATA OUTPUT, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL J3
TOOL SIZE: CORE: 70K
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THE TEST COVERAGE ANALYZER MEASURES THE EFFECTIVENESS OF A SET OF TEST CASES APPLIED TO SOFTWARE. TO DO THIS, IT BREAKS THE SOFTWARE INTO ITS CONSTITUENT LOGIC SEGMENTS AND AUGMENTS THEM SO THAT WHEN THE SOFTWARE EXECUTES IT COUNTS THE NUMBER OF TIMES EACH SEGMENT WAS EXECUTED. A POSTPROCESSOR PRINTS THESE COUNTS. USERS MAY USE THESE COUNTS TO IDENTIFY UNTESTED SEGMENTS (IN ORDER TO IMPROVE THE TESTS OR AT LEASE BETTER UNDERSTAND WHY SEGMENTS ARE NOT TESTED) AND TO IDENTIFY HEAVILY EXECUTED SEGMENTS AS POSSIBLE CANDIDATES FOR OPTIMIZATION.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: BOEING AEROSPACE CO.
CONTACT: ROBERT L. GLASS, BOEING AEROSPACE CO., PO BOX 3999, SEATTLE, WA, 98124, USA, 206-773-0664
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: CHECKSUM, TITLE: CHECKSUM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, VERSION CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: CHECKSUM CAN BE APPLIED TO A PROGRAM LIBRARY FOLLOWING ACCEPTANCE TESTING TO ESTABLISH A BASELINE OF INDIVIDUAL PROGRAM CHECKSUMS. CHECKSUM WILL IDENTIFY ADDITIONS TO THE LIBRARY, DELETIONS FROM THE LIBRARY, AND CHANGES TO OLD MEMBERS OF THE LIBRARY. IT IDENTIFIES INTENTIONAL AND SURREPTITIOUS MODIFICATIONS TO A CONTROLLED SYSTEM AND PROVIDES A CONCISE MEANS OF DESCRIBING A SOFTWARE CONFIGURATION. CHECKSUM PROVIDES AN AUTOMATED ACCURATE AND EFFICIENT WAY OF MAINTAINING COGNIZANCE OF A SOFTWARE CONFIGURATION AT ALL LEVELS (SUBROUTINE, MODULE, PROGRAM, AND IN ALL AREAS (DATA, CODE, DOCUMENTATION, ETC.)).

REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: A. J. DESALVIO, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3083
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CHILL TRANS, TITLE: CHILL TRANSLATOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, CHILL, TRANSFORMATION, TRANSLATION, COMPILATION, MACHINE OUTPUT, INTERMEDIATE CODE,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800900
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL SIZE: 936 STATEMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THE CHILL COMPILER IS AN INCREMENTAL INTERACTIVE CHILL PROGRAM TRANSLATOR. IT READS ONE STATEMENT AT A TIME AND TRANSLATES IT INTO THE UNOPTIMISED OUTPUT CODE. THE COMPILER USES A SYNTAX ANALYSER TO PRODUCE A CONDENSED POLISH REPRESENTATION OF EACH STATEMENT. A PASS THROUGH THE REVERSED POLISH NOTATION TO GENERATE THE TARGET CODE.
DOCUMENTATION: TECHNICAL DESCRIPTION (20)
REFERENCES: [PAYN73], A.J. PAYNE, "SAPS A CRITICAL REVIEW", SPERRY UNIVAC LDC, 730000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: CICS DUMP ANALY, TITLE: CICS DUMP ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, CICS, MEMORY DUMP, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL SIZE: CORE: 50K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, SVS, OS/VS, DOS, OS/MVS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: THE CICS DUMP ANALYZER WAS DESIGNED TO REDUCE THE TIME SPENT IN GOING THROUGH CICS DUMPS IN ORDER TO LOCATE THE REASONS FOR SYSTEM ABEND'S THE DUMP ANALYZER AUTOMATICALLY PERFORMS THE HEXADECIMAL CALCULATIONS, ADDRESS CHAIN SEARCHES, BIT MASK INTERPRETATIONS, AND OTHER TASKS NORMALLY PERFORMED BY THE PROGRAMMER. FOLLOWING A CICS ABEND, THE DUMP ANALYZER WILL PERFORM A COMPUTER-SPEED INSPECTION AND ANALYSIS OF THE ENTIRE CICS ENVIRONMENT.

THE RESULTS ARE THEN PRESENTED IN AN EASILY ADDRESS POINTERS; 2) VALIDATE ALL SYSTEM QUEUES AND CHAINS; 3) REPORT ALL SYSTEM-MAINTAINED STATISTICS; 4) INTERPRET CONTROL BLOCKS AND REPORT THEM, USING FAMILIAR CICS SYMBOLICS AS WELL AS THEIR ENGLISH DESCRIPTIONS; 5) INTERPRET ALL SYSTEM BIT VALUES IN ENGLISH; 6) IDENTIFY THE CONTROL PROGRAM IN WHICH THE ABEND HAS OCCURRED; 7) COLLECT AND PRINT TOGETHER ALL CONTROL STRUCTURES RELATED TO A GIVEN TASK, EVEN THROUGH DATA IS DISPERSED THROUGHOUT MEMORY; 8) PROVIDE A CICS TRACE TABLE SORTED BY TASK; AND 9) PROVIDE INTERPRETED TRACE TABLE
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: COMMERCIAL SOFTWARE, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: COBOL OPTIMIZ, TITLE: COBOL OPTIMIZATION INSTRUMENTERS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THERE ARE THREE TOOLS THAT AUTOMATICALLY GENERATE MODULE AND STATEMENT LEVEL EXECUTION-TIME PROFILES (I.E., REPORTS) OF PROGRAMS. THE PROFILES QUANTIFY OPTIMIZATION EFFORTS IN DETAIL. THEY SHOW ABSOLUTE AND RELATIVE EXECUTION TIMES FOR SUBSYSTEMS, MODULES, AND STATEMENTS AS WELL AS FREQUENCY COUNTS AND OPTIMIZATION INDICES. THE FIRST TOOL OPERATES AT THE PROGRAM LEVEL. THE SECOND TOOL OPERATES AT THE PARAGRAPH LEVEL, AND THE THIRD TOOL OPERATES AT THE STATEMENT LEVEL. THESE TOOLS REQUIRE NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. THEY SIMPLY ACCEPT AS INPUT SOURCE PROGRAMS AND TEST DATA, AND OUTPUT CLEAR PROFILES. THESE TOOLS PERMIT TOP-DOWN OPTIMIZATION IN A NATURAL MANNER. THEY POSSESS A STRONG MANAGEMENT ORIENTATION AND CAN HAVE MUCH IMPACT IN PROPERLY FOCUSING OPTIMIZATION EFFORTS. THEY SERVE AS AN EXCELLENT QUALITY ASSURANCE FACILITY.
DOCUMENTATION: USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: COBOL STRUCT, TITLE: COBOL STRUCTURED CODE ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, AUDITING, STRUCTURE CHECKING,

STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): B00000
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: 3,800 STATEMENTS
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM FEDERAL SOFTWARE EXCHANGE, FSWEC-80/011B
TOOL SUMMARY: MONITORING THE USE OF STRUCTURED PROGRAMMING BY MANUAL INSPECTION OF COBOL SOURCE CODE IS A TIME-CONSUMING PROCESS. THE STRUCTURED CODE ANALYZER WILL AUTOMATICALLY DETECT AND PINPOINT OCCURRENCES OF UNSTRUCTURED COBOL CODE BY A STATIC ANALYSIS OF THE SOURCE CODE. THE INPUT IS A COBOL SOURCE PROGRAM WHICH HAS COMPILED WITH NO ERRORS. THE OUTPUT IS A REPORT CONTAINING TWO SECTION. THE FIRST IS A LISTING OF THE COBOL SOURCE CODE WHICH WAS ANALYZED, WITH A COMMENT DENOTING THE TYPE OF UNSTRUCTURED CODE PRINTED TO THE RIGHT OF THE CORRESPONDING SOURCE CODE LINE WHERE THE TYPE WAS FOUND. THE SECOND SECTION IS A SUMMARY PAGE, GIVING THE TOTAL NUMBER OF OCCURRENCES OF EACH TYPE OF UNSTRUCTURED CODE FOUND.
REFERENCES: [FSECB0A], GENERAL SERVICES ADMINISTRATION/NATIONAL TECHNICAL INFORMATION SERVICE, "FEDERAL SOFTWARE EXCHANGE CATALOG", GSA/ADTS/C-80/3, PB80-904003, B00900
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, 703-756-2610
INFORMATION SOURCE: FEDERAL SOFTWARE EXCHANGE CATALOG

ACRONYM: COBOL TESTING, TITLE: COBOL TESTING INSTRUMENTERS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THESE ARE THREE TOOLS THAT AUTOMATICALLY GENERATE MODULE AND STATEMENT LEVEL EXECUTION-TIME PROFILES (IE., REPORTS) OF PROGRAMS. THE PROFILES QUANTIFY TEST COVERAGE AND TEST EFFECTIVENESS IN DETAIL. THE FIRST TOOL OPERATES AT THE PROGRAM LEVEL. THE SECOND TOOL OPERATES AT THE PARAGRAPH LEVEL, AND THE THIRD TOOL OPERATES AT THE STATEMENT LEVEL. THESE TOOLS REQUIRE NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. THEY SIMPLY ACCEPT AS INPUT SOURCE PROGRAMS AND TEST DATA, AND OUTPUT CLEAR PROFILES. THEY PERMIT TOP-DOWN TESTING IN A NATURAL MANNER. THESE PRODUCTS POSSESS A STRONG MANAGEMENT ORIENTATION AND CAN HAVE MUCH IMPACT ON MINIMIZING THE COST

OF TESTING. THEY SERVE AS AN EXCELLENT QUALITY ASSURANCE FACILITY WHICH ALLOW MANAGEMENT TO SET, FACILITATE, AND ENFORCE TESTING STANDARDS. THE TESTING INSTRUMENTERS ARE MEMBERS OF SOFTOOL 80, AN INTEGRATED SET OF TOOLS MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: COBOL TRACING, TITLE: COBOL TRACING INSTRUMENTERS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THESE ARE THREE TOOLS THAT AUTOMATICALLY DOCUMENT THE PATH OF PROGRAM CONTROL FLOW FROM MODULE (STATEMENT) TO MODULE (STATEMENT). THE FIRST TOOL OPERATES AT THE PROGRAM LEVEL, THE SECOND TOOL OPERATES AT THE PARAGRAPH LEVEL, AND THE THIRD TOOL OPERATES AT THE STATEMENT LEVEL. THESE PRODUCTS OFFER THE SOFTWARE PROFESSIONAL A FLEXIBLE, CONSISTENT, AND EASY TO USE TRACING FACILITY. THESE TOOLS REQUIRE NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. THEY SIMPLY ACCEPT AS INPUT SOURCE PROGRAMS AND TEST DATA, AND OUTPUT CLEAR TRACE DOCUMENTATION (I.E., PROFILES) WHICH IS FORMATTED AND INDENTED TO FACILITATE UNDERSTANDING. THEY PERMIT TOP-DOWN TRACING IN A NATURAL MANNER. THE TRACING INSTRUMENTERS ARE MEMBER OF SOFTOOL 80, AN INTEGRATED SET OF TOOLS MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUALS
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: COBOL/ADE, TITLE: AUTOMATED DEBUGGING ENVIRONMENT FOR COBOL
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: RUN TIME ANALYSIS, SUBJECT, CODE INPUT, COBOL, USER OUTPUT, DIAGNOSTICS, DYNAMIC ANALYSIS, TIMING, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED

COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: COBOL/ADE IS A TOOL DESIGNED TO AID APPLICATIONS PROGRAMMERS IN TESTING AND DEBUGGING COBOL PROGRAMS. COBOL/ADE IS RESPONSIVE TO THE DEBUGGING NEEDS OF COBOL PROGRAMMERS AT EVERY LEVEL: DETAILED PROMPTING AND AUTOMATIC DIAGNOSTIC ACTIONS ASSURE THAT THE NOVICE PROGRAMMER WILL RECEIVE MEANINGFUL RESULTS FROM EVERY DEBUGGING SESSION; SOPHISTICATED DEBUGGING TOOLS ASSURE THAT THE EXPERIENCED COBOL PROGRAMMER WILL BE ABLE TO DEFINE AND ANALYZE EVEN THE MOST INTRICATE PROBLEM. COBOL/ADE APPROACHES DEBUGGING AS A LOGICAL, PROGRAMABLE TASK. IN A CONTROLLED ENVIRONMENT, COBOL/ADE PROMPTS THE PROGRAMMER TO IDENTIFY SPECIFIC PROBLEM AREAS IN THE PROGRAM AND TO REQUEST THE TYPE OF ANALYSIS TO BE DONE ON EACH. TYPICAL PROBLEMS, SUCH AS ABENDS CAUSED BY BAD DATA ARE AUTOMATICALLY ANALYZED BY COBOL/ADE. PROGRAMMERS AND ONLINE RESOURCES ARE RELEASED FOR OTHER WORK WHILE COBOL/ADE PERFORMS ITS PROBLEMS DETECTION AND ANALYSIS ACTIVITIES IN BATCH.
DEVELOPER: APPLIED DATA RESEARCH
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: COBOL/CP, TITLE: COBOL/CP FOR COBOL-TO-COBOL CONVERSION
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, IBM DOS ANSI COBOL (1968), IBM SYSTEM/3 ANSI COBOL, IBM DOS LEVEL D COBOL, HONEYWELL H-200 LEVEL D COBOL, HONEYWELL H-200 LEVEL H COBOL, RCA SPECTRA COBOL, IBM OS LEVEL E COBOL, IBM OS LEVEL F COBOL, TRANSFORMATION, TRANSLATION, CONVERSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, IBM DOS ANSI COBOL (1968), IBM OS ANSI COBOL (1968), IBM OS/VS ANSI COBOL (1974), USER OUTPUT, DIAGNOSTICS,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): COMMERCIAL PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: COBOL/CP FEATURES: LINE-BY-LINE SYNTAX TRANSLATION, FLAGGING OF AREAS REQUIRING MANUAL INTERVENTION, SUMMARIZATION OF CRITICAL REVIEW REQUIREMENTS, GENERATION OF ADVISORY JCL. CONVERSIONS ARE SUPPORTED TO: IBM DOS ANSI COBOL (1968), IBM OS ANSI COBOL (1968), AND IBM OS/VS ANSI COBOL (1974). PLUS: CONVERSION OF INDEXED, DIRECT AND RELATIVE FILE ACCESS METHODS TO VSAM. COBOL/CP MINIMIZES COBOL-TO-COBOL CONVERSION COSTS, ENCOURAGES UPGRADING TO THE NEW OPERATING ENVIRONMENT, AND CAN BE ADAPTED TO HANDLE UNIQUE CONVERSION REQUIREMENTS.

DEVELOPER: APPLIED DATA RESEARCH
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: COBOL/DV, TITLE: COBOL PROGRAM DEVELOPMENT MAINTENANCE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, I/O SPECIFICATION ANALYSIS, DYNAMIC ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: PROGRAMMING AIDS; HIGH-LEVEL FUNCTIONAL VERBS - 1) DATA MANIPULATION 2) FILE HANDLING 3) TABLE HANDLING 4) REPORT WRITING, 5) DOCUMENTATION; COBOL SHORT FORMS- RESERVED WORDS, PHASES AND CLAUSES; DATA-NAME PREFIXER: READABLE ALTERNATIVE TO DATANAME QUALIFICATION. TEST DATA GENERATOR: USES COBOL FILE AND DATA DESCRIPTIONS - GENERATES TEST DATA IN PARALLEL WITH PROGRAM DEVELOPMENT; COMPLETE FLEXIBILITY OVER DATA GENERATION- 1) FIELDS GENERATED AS CONSTANTS, COMPUTED, RANDOM, PRINTABLE, 2) VOLUME OF TEST DATA UNDER PROGRAM CONTROL; REGENERATION OF TEST DATA FOLLOWING MAINTENANCE- DATA GENERATION PARAMETERS REMAIN IN THE PROGRAM AS COMMENTARY. RUN-TIME DEBUGGING AID: - ABNORMAL TERMINATION ANALYSIS AND REPORTING - MULTIPLE ABENDS CAN BE TRAPPED, ANALYZED, LOCATED AND REPORTED DURING A SINGLE TEST; PROGRAM ACTIVITY DISPLAY - INPUT, INTERMEDIATE RESULTS AND OUTPUT CONTENTS DISPLAYED IN ORDER OF TEST EXECUTION;
DEVELOPER: APPLIED DATA RESEARCH, PRINCETON, NJ
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: COBOL/QDM, TITLE: COBOL QUALITY ASSURANCE, DOCUMENTATION MAINTENANCE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, EDITING, FORMATTING, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: COBOL/QDM'S PROGRAM STANDARDIZING PROCEDURES INCLUDE: 1) AUTOMATIC CONVERSION OF ALTER STATEMENTS TO MAINTAINABLE COBOL SOURCE CODE 2) CONSISTENT GENERATION OF COBOL SOURCE FORMAT FOR IMPROVED READABILITY AND MAINTENANCE. 3) TEXT EDITING CAPABILITIES FOR REVISING OBSCURE DATA-NAMES AND PROCEDURE-NAMES TO MORE MEANINGFUL

TERMS. 4) PREFIXING PROCEDURE-NAMES WITH SEQUENCE NUMBERS FOR EASY REFERENCE. 5) AUTOMATIC "LAUNDERING" OF DATA DESCRIPTIONS FOR CONSISTENT PHRASE AND CLAUSE CONTENT AND ORDER. COBOL/QDM'S AUDITING, MAPPING AND PERFORMANCE MEASUREMENT FACILITIES INCLUDE: 1) LINE-BY-LINE ANALYSIS OF COBOL SOURCE PROGRAMS TO FLAG COMMON STANDARDS VIOLATIONS OR SOURCE INEFFICIENCIES. 2) SUMMARY REPORTING TO INDICATE OVERALL PROGRAM QUALITY. 3) DATA DIVISION MAPPING FACILITIES FOR IMPROVED DOCUMENTATION AND EASE OF MAINTENANCE. 4) PERFORMANCE MEASUREMENT AND REPORTING TO LOCATE AREAS WHERE FURTHER ANALYSIS AND REPROGRAMMING CAN MOST IMPROVE PERFORMANCE.
DEVELOPER: APPLIED DATA RESEARCH, PRINCETON, NJ
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: COBOL/SP, TITLE: HIGHER-LEVEL STRUCTURED PROGRAMMING IN COBOL
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, STRUCTURED COBOL, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: MODULAR CONTROL VIA COBOL CALL AND PERFORM. COBOL/SP SUPPORTS MODULAR TOPDOWN DESIGN AND DEVELOPMENT METHODS. LOCAL DATA ITEM DEFINITION. COBOL/SP KEEPS LOCAL DATA DEFINITIONS AND REFERENCES TOGETHER FOR READABILITY AND EASE OF MAINTENANCE. PROVISION FOR CONTROL VARIABLES. COBOL/SP CLEARLY DIFFERENTIATES BETWEEN OPERATIONS ON CONTROL VARIABLES AND OPERATIONS ON DATA ELEMENTS. CONVENTIONAL COBOL SEQUENCE OPERATIONS COBOL/SP'S MOVE, ADD, WRITE, ETC., STATEMENTS ARE IDENTICAL TO COBOL, PROVIDING A FRAME OF REFERENCE WITH COBOL AND REQUIRING NO SPECIAL TRAINING. TWO-WAY AND MULTI-WAY SELECTION STRUCTURES. COBOL/SP'S IF...ELSE...ENDIF AND SELECT...ENDSELECT ARE STANDARD PROGRAM BUILDING BLOCKS FOR CLEAR AND PRECISE LOGICAL STRUCTURE. IN-LINE LOOPING STRUCTURES. COBOL/SP'S LOOP...WHILE...ENDLOOP ELMINATES THE NEED FOR SUPERFLUOUS GO TOS, PERFORMS AND PARAGRAPHS. AUTOMATIC SOURCE FORMATTING. COBOL/SP INDENTS STRUCTURED SOURCE CODE TO HIGHLIGHT LOGICAL RELATIONSHIPS.
DEVELOPER: APPLIED DATA RESEARCH
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: COBOL/SPP, TITLE: COBOL STRUCTURED PROGRAMMING PRECOMPILER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, COBOL, STRUCTURED COBOL, ANSI COBOL (1968), TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 740000
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370, HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THE COBOL STRUCTURED PROGRAMMING PRECOMPILER WAS DEVELOPED TO PROCESS AN AUGMENTED ANS COBOL, X.3.23-1968. THE ADDITIONS TO THIS LANGUAGE ARE IN THE FORM OF STRUCTURING VERBS WHICH PERMIT THE PROGRAMMER TO WRITE THE BASIC CONTROL LOGIC FIGURES REQUIRED TO IMPLEMENT STRUCTURED PROGRAMMING FORMS. THE PRECOMPILER IS WRITTEN IN ANS COBOL SUCH THAT CONVERSION TO OTHER COMPUTER SYSTEMS CAN BE ACCOMPLISHED WITH A MINIMUM OF EFFORT.
DOCUMENTATION: USER MANUAL
DEVELOPER: INTERNATIONAL BUSINESS MACHINES CORP.
CONTACT: FRANK S. LAMONICA, RADC/ISIE, GRIFFISS AFB, NY, 13441, USA, 315-330-7934
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: COGENT, TITLE: COGENT II COMPILER GENERATOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, VHLL INPUT, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: COGENT IS A PROGRAMMING SYSTEM THAT ACCEPTS A METALANGUAGE DESCRIPTION OF A COMPUTER LANGUAGE, INCLUDING BOTH SYNTAX AND SEMANTICS, AND AUTOMATICALLY PRODUCES A COMPILER FOR THAT LANGUAGE. COGENT IS DESIGNED FOR THE DEVELOPMENT OF COMPILERS FOR INDUSTRY - STANDARD LANGUAGES SUCH AS ALGOL, COBOL AND FORTRAN AS WELL AS SPECIAL-PURPOSE LANGUAGES FOR PROCESS CONTROL, SYSTEM PROGRAMMING, INFORMATION UPDATE AND RETRIEVAL LOGIC TESTING, AND OTHER SPECIAL APPLICATIONS. COGENT IS ALSO USEFUL AS A MEANS OF IMPLEMENTING PREPROCESSORS TO STANDARD LANGUAGE COMPILERS AND DEVELOPING PROGRAM CONVERSION AIDS TO TRANSLATE PROGRAMS FROM ONE OPERATING ENVIRONMENT TO ANOTHER. THE SYSTEM IS IMPLEMENTED WITH A TECHNIQUE THAT IS SAID TO BE HIGHLY MACHINE-INDEPENDENT. COGENT AND THE COMPILERS THAT IT GENERATES CAN BE INSTALLED ON A VARIETY OF COMPUTING EQUIPMENT, INCLUDING MINICOMPUTERS. COMPILERS PRODUCED CAN GENERATE CODE FOR MACHINES OTHER THAN THE HOST AS A MEANS OF IMPLEMENTING CROSS COMPILERS.

DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: VIRTUAL SYSTEMS, INC.
CONTACT: VIRTUAL SYSTEMS, INC., 1500 NEWELL AVE, RM 406, WALNUT CREEK, CA, 94596, USA, 415-935-4944
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: COMDIM, TITLE: COMMON DIMENSION PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL SUMMARY: THIS PROGRAM AUTOMATICALLY UPDATES ARRAY LENGTHS, BASED ON INPUT, IN THE SOURCE CODE OF INPUT FORTRAN ROUTINES.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMGEN, TITLE: COMMON SPECIFICATIONS STATEMENT GENERATOR
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, CONFIGURATION MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX
TOOL SUMMARY: COMGEN IS DESIGNED TO PROVIDE THE FORTRAN PROGRAMMER WITH AUTOMATED SOFTWARE FOR THE DEVELOPMENT AND MAINTENANCE OF COMPUTER PROGRAMS. THE PRIME CAPABILITIES OF THE SYSTEM ARE AS FOLLOWS: GENERATION AND AUTOMATIC INSERTION OF COMMON SPECIFICATION STATEMENTS INTO FORTRAN PROGRAMS; DETERMINATION AND DISPLAY OF ALL PROGRAM COMMON VARIABLES AND COMMON VARIABLES PER SUBROUTINE; AUTOMATED OPERATIONS FOR CONVERTING EXISTING PROGRAMS OVER TO A COMGEN COMPATIBLE DATA BASE FOR FUTURE UPDATES AND MAINTENANCE; OUTPUT OF VARIABLE AND SUBROUTINE CROSS-REFERENCES; DEFINITION AND DISPLAY OF SUBROUTINE INTERFACES; PROVISION OF NUMEROUS AUTOMATIC PROGRAMMER AIDS. COMGEN IS THE COLLECTION OF THE CAPABILITIES CONTAINED IN THE PROGRAMS BLKGEN, SPECPN, DPNDCY, FORREF, CCREF, AUTODOC, DEPCHT, DOCGEN, DOCEDT.

DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SYS ENG AND ANAL DEP
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMGEN/TRW, TITLE: COMMON BLOCK GENERATION PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE PURPOSE OF THE COMGEN PROGRAM IS TO EMULATE THE COMDECK CAPABILITY OF THE CDC UPDATE SYSTEM. WORKING ON FORTRAN CODE USING THE TIMESHARE SYSTEM, IT SPECIALIZES ON JUST THIS ONE ASPECT OF THE UPDATE SYSTEM. THIS ALLOWS COMGEN TO PROVIDE A FASTER MORE EFFICIENT TOOL FOR THE MULTIPLE RUNS DURING PROGRAM DEVELOPMENT. THE USER'S FILES ARE IN A FORMAT FOR CONVERSION TO UPDATE AFTER DEVELOPMENT IS COMPLETED, IF THAT IS DESIRED. THE FILE INPUT TO COMGEN CONSISTS OF TWO RECORDS. A MASTER COMDECK, CONTAINING ALL OF THE COMMON VARIABLES, IS IN THE FIRST RECORD. THE SECOND RECORD CONTAINS THE USER'S SOURCE ROUTINES. DURING PROCESSING, COMMON BLOCKS IDENTIFIED IN THE COMDECK RECORD WHICH ARE REQUESTED BY SOURCE ROUTINES ARE INSERTED, CREATING AN OUTPUT COMPILE FILE. THIS ALLOWS CHANGES TO COMMON BLOCKS TO BE MADE IN ONLY ONE PLACE THUS ELIMINATING ERRORS DUE TO CHANGES MADE IN SOME ROUTINES BUT NOT IN OTHERS. A FILE LISTING IS ALSO GENERATED WHICH IS DATED, PAGE NUMBERED AND WHICH BEGINS EACH ROUTINE ON A NEW PAGE.
DOCUMENTATION: TRW IOC 6413.30-096
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMLIST, TITLE: COMLIST
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE

FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, CHANGE CONTROL, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: COMLIST IS A FORTRAN COMPUTER PROGRAM WHICH PROVIDES A LIST, BY SUBROUTINE, OF ALL COMMON VARIABLES USED BY A GIVEN PROGRAM. THE OUTPUT FROM COMLIST CAN BE PRESENTED TO THE REFER UTILITY PROGRAM TO OBTAIN A CROSS-REFERENCE LISTING IDENTIFYING ALL SUBROUTINES WHICH USE A PARTICULAR COMMON VARIABLE. SUCH A CROSS-REFERENCE LISTING IS INVALUABLE IN ANALYZING THE EFFECT OF A PROPOSED SOFTWARE MODIFICATION AND IN DEBUGGING AN ERRONEOUS COMPUTER RUN.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: A. J. DESALVIO, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3083
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMLIST/TRW, TITLE: COMLIST
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: COMLIST IS A FORTRAN COMPUTER PROGRAM WHICH PROVIDES A LIST, BY SUBROUTINE, OF ALL COMMON VARIABLES USED BY A GIVEN PROGRAM. THE OUTPUT FROM COMLIST CAN BE PRESENTED TO THE REFER UTILITY PROGRAM TO OBTAIN A CROSS-REFERENCE LISTING IDENTIFYING ALL SUBROUTINES WHICH USE A PARTICULAR COMMON VARIABLE. SUCH A CROSS-REFERENCE LISTING IS INVALUABLE IN ANALYZE THE EFFECT OF A PROPOSED SOFTWARE MODIFICATION AND IN DEBUGGING AN ERRONEOUS COMPUTER RUN.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: A. J. DESALVIO, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3083

INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMMAP, TITLE: COMMON BLOCK ANALYSIS TOOL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, CROSS REFERENCE, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR INTERNAL BOEING USE
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY
TOOL SUMMARY: COMMAP IS A STATIC ANALYZER FOR FORTRAN PROGRAMS. OPERATING ON EXISTING SOURCE CODE, IT PRODUCES A MATRIX CROSS-REFERENCING VARIABLES IN COMMON BLOCKS VERSUS THE SUBROUTINES THAT USE THEM. THE MATRIX SPECIFIES WHETHER A VARIABLE IS REFERENCED OR DEFINED WITHIN A SUBROUTINE. IT ALSO ANALYZES THE INFORMATION IN THE MATRIX AND REPORTS ON POTENTIAL ERRORS IN THE USE OF VARIABLES (FOR EXAMPLE, VARIABLES WHICH ARE REFERENCED, BUT NEVER DEFINED).
REFERENCES: [STUC81], LEON G. STUCKI AND HARRY D. WALKER, "CONCEPTS AND PROTOTYPES OF ARGUS -- A PROGRESS REPORT", SOFT ENG ENV, ED. HORST HUENKE, NORTH-HOLLAND PUB CO, 810000
DEVELOPER: BOEING COMPUTER SERVICES
CONTACT: LEON G. STUCKI, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346 M/S 9C-03, SEATTLE, WA, 98124, USA, 206-575-5118
INFORMATION SOURCE: TOOL FAIR

ACRONYM: COMPARE, TITLE: COMPARE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): ECL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: ALLOWS COMPARISON OF ANY TWO FILES AGAINST ONE ANOTHER IN ORDER TO DETECT SLIGHT DIFFERENCES. USED EXTENSIVELY IN NAVIGATION SOFTWARE CERTIFICATION WHEN VERSIONS OF ABSOLUTES ARE SUPPOSED TO PROVIDE IDENTICAL OUTPUT FILES. IT HAS THE CAPABILITY TO RESYNCHRONIZE UPON USER INPUT (INTERACTIVE) TO CONTINUE AFTER DIFFERENCES ARE DETECTED.
DOCUMENTATION: USER'S MANUAL

DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: COMSCAN, TITLE: COMMON SCANNER ROUTINE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COBOL, BAL
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE COMSCAN PROGRAM ANALYZES THE FORTRAN COMMON DATA BASE PARAMETERS IN EACH ROUTINE OF A FORTRAN PROGRAM FOR UNIFORMITY.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPT.
CONTACT: TOM HEIM, TRW, DEFENSE SYSTEMS SOFTWARE DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-2884
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMSORT, TITLE: COMMON SORT ROUTINE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: COMSORT READS A FORTRAN SOURCE PROGRAM AND PROCESSES ALL COMMON, DIMENSION, TYPE AND EQUIVALENCE STATEMENTS. IT SORTS AND PRINTS OUT COMMON VARIABLES ACCORDING TO COMMON BLOCK AND INCREASING LOCATION WITHIN THE BLOCK. THUS, DIFFERENT NAMES FOR SAME LOCATION WILL APPEAR TOGETHER. PRINTS DIMENSIONS AND TYPE ALONG WITH LOCATION AND VARIABLE NAME AND LISTS ALL ROUTINES WHERE THIS INFORMATION IS FOUND. PRINTS ALPHABETIZED LISTING OF ALL COMMON VARIABLES. IF THE SAME VARIABLE NAME IS USED IN MORE THAN ONE BLOCK, OR APPEARS AT DIFFERENT LOCATIONS WITHIN THE SAME BLOCK, MULTIPLE REFERENCES WILL BE GIVEN. COMSORT WILL REPORT, BY NAME, PARAMETERS WHICH ARE: MULTIPLY DEFINED IN COMMON, DEFINED BOTH IN COMMON AND AS FORMAL PARAMETERS, USED AS VARIABLE DIMENSIONS, BUT ARE NOT DEFINED AS FORMAL PARAMETERS, EXPLICITLY TYPED MORE THAN ONCE, DIMENSIONED MORE THAN ONCE, EQUIVALENCED TO COMMON MORE THAN ONCE.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE

TOOLS SERIES, 790100
DEVELOPER: TRW, SIMULATION SOFTWARE DEPT
CONTACT: DAVID RICHMOND, TRW, SIMULATION SOFTWARE DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-4190
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: COMSTAR, TITLE: COMPUTATIONAL STORAGE AND RETRIEVAL PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, MACHINE OUTPUT, DATA OUTPUT, STATIC ANALYSIS, MANAGEMENT, LIBRARY MANAGEMENT, FILES MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COMPASS
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: COMSTAR IS A MAJOR DATA STORAGE AND RETRIEVAL SYSTEM. IT IS RELATED TO OTHER MAJOR SYSTEMS SUCH AS GIM, BUT POSSESSES UNIQUE CAPABILITIES WHICH MAKE IT PARTICULARLY WELL SUITED TO HANDLE LARGE VOLUME BATCH MODE DATA STORAGE AND RETRIEVAL PROBLEMS. COMSTAR ALLOWS THE USER TO DEFINE HIS DATA STORAGE FILE STRUCTURE, INPUT COMPUTATIONAL FUNCTIONS TO BE PERFORMED, AND OUTPUT DATA FORMATS VIA DATA CARD SPECIFICATIONS. AS WITH ALL DATA STORAGE AND RETRIEVAL SYSTEMS, COMSTAR'S PRINCIPAL IMPORTANCE LIES IN ITS ABILITY TO STRUCTURE AND STORE LARGE VOLUMES OF DATA AND THEN ON REQUEST SORT OR COMBINE THE RAW DATA, COMPILE OR COMPUTE SUPPORTIVE (OR SUMMARY) INFORMATION, AND PRESENT THE REQUESTED OUTPUT IN THE USER'S PREFERRED FORMAT. COMSTAR PROVIDES THE CAPABILITY TO INPUT COMPUTATIONAL REQUESTS AND OUTPUT REQUESTS USING FORTRAN-LIKE STATEMENTS.
DOCUMENTATION: FUNCTIONAL SPECIFICATION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DATA MANAGEMENT SYSTEMS DEPARTMENT
CONTACT: MILT HAYASHIDA, TRW, DATA MANAGEMENT SYSTEMS DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-2910
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CONFIG, TITLE: CONFIG
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN IV, ASSEMBLY LANGUAGE, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, CONFIGURATION MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370

TOOL SUMMARY: GIVEN A MASTER SOURCE TAPE OF FORTRAN AND ASSEMBLY LANGUAGE SOURCE CARD IMAGES, CONFIG GENERATES A LIST IDENTIFYING EACH ROUTINE BY NAME, MODULE NUMBER, SEQUENCE CODE, DOCUMENT NUMBER, NUMBER OF CARDS, AND THE ID OF THE NEXT ROUTINE ON TAPE. TWO LISTS ARE GENERATED, ONE IDENTIFYING THE ROUTINES IN THE ORDER THEY APPEAR ON TAPE (SEQUENCE CODE ORDER) AND A SECOND IN ALPHABETICAL ORDER BY ROUTINE NAME.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: A. J. DESALVIO, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3083
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CONFIGURATOR, TITLE: CONFIGURATOR
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, SYSTEMS SPECIFICATION, USER OUTPUT, GRAPHICS, STATIC ANALYSIS, COMPLETENESS CHECKING, CONSISTENCY CHECKING, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL SIZE: 2000 STATEMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THIS PROGRAM ACCEPTS CONFIGURATION DATA OF HARDWARE OR SOFTWARE SYSTEMS WITH THEIR CONNECTION OR DEPENDENCE DATA AND TIMING/SPACE/COST DETAILS. IT CHECKS THE CONSISTENCY/COMPLETENESS OF THE SYSTEMS WHICH WERE DEFINED. THE TOTAL COST/SPACE/TIMING IS CALCULATED AND THE EFFICIENCY OF THE SYSTEM IS EVALUATED. THE LAYOUT IS DRAFTED OUT ON A GRAPHICAL TERMINAL TO SHOW THE OVERALL SYSTEM.
DOCUMENTATION: TECHNICAL DOCUMENTATION (10)
REFERENCES: [PAYN75], A.J. PAYNE, "DESIGN OF DISTRIBUTED COMPUTERS", 9TH NZ MATHEMATICS COLLOQUIM, 750000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: COPE (TM), TITLE: COBOL PLUS EXTENSIONS
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, PROGRAM SPECIFICATION, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL

TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE CONSULTING SERVICES
TOOL SUMMARY: COPE IS A UNIQUE COBOL ORIENTED SOFTWARE PRODUCT WHICH COMBINES A LOGIC TABLE PROCESSOR AND A MACRO GENERATOR. COPE CAN ELIMINATE THE WRITING OF AS MUCH AS 50% OF PROCEDURE DIVISION CODE. COPE IMPROVES DOCUMENTATION SPEEDS DEBUGGING AND EASES MAINTENANCE. COBOL PROGRAMS WRITTEN WITH COPE EXTENSIONS CONSIST OF COBOL TEXT AND LOGIC TABLES (DECISION TABLES). THESE TABLES CAN EXPRESS "IF-THEN'ELSE" OR "CASE" LOGIC AND "DO" LOOPS. TABLES CAN ALSO BE CONSTRUCTED IN A STRAIGHTFORWARD WAY FROM FLOWCHARTS OR STATE DIAGRAMS. THE COPE TRANSLATOR (ITSELF A COPE/COBOL PROGRAM) CONVERTS LOGIC TABLES INTO EFFICIENT, ALGORITHMICALLY OPTIMIZED IN-LINE COBOL STATEMENTS. COPE IS WRITTEN IN ANS COBOL AND GENERATES ANS COBOL. COPE LOGIC TABLES OBSERVE COBOL CONVENTIONS MAKING THEM A NATURAL EXTENSION OF THE COBOL LANGUAGE.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: SOFTWARE CONSULTING SERVICES
CONTACT: MARTHA J. CICHELLI, SOFTWARE CONSULTING SERVICES, 910 WHITTIER DRIVE, ALLENTOWN, PA, 18103, USA, 215-797-9690
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: CORE, TITLE: CORE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, CICS, MEMORY DUMP, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL SIZE: CORE: 2K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS, DOS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: USING CORE, THE SYSTEM PROGRAMMER CAN SEE WHAT IS HAPPENING IN THE CICS SYSTEM. HE CAN SEE ON THE TERMINAL SCREEN EXACTLY WHAT HE WOULD SEE IN A DUMP PRINTOUT WITHOUT CANCELING THE ON-LINE SYSTEM. CORE ALSO ALLOWS THE PROGRAMMER OR PROGRAMMING TEAM TO SET THE MACHINE ENVIRONMENT, MAKE TEMPORARY MODIFICATIONS TO THE ENVIRONMENT, AND TEST A PROGRAM, A GROUP OF PROGRAMS, OR AN ENTIRE SYSTEM.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: ON-LINE SOFTWARE INTERNATIONAL
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: COTUNE II, TITLE: COTUNE II
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, COBOL F, TRANSFORMATION, INSTRUMENTATION, OPTIMIZATION, USER OUTPUT, GRAPHICS, HISTOGRAMS, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, ALC
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: COTUNE PROVIDES CRITICAL INFORMATION NECESSARY IN COBOL PROGRAM DEVELOPMENT, OPTIMIZATION, DEBUGGING, TESTING AND VALIDATION, MAINTENANCE AND RUN DOCUMENTATION BY MEANS OF AN EXECUTION-TIME DATA GATHERING PROCESS. ITS OUTPUT IS THE COMPILER SOURCE LISTING WITH ADDED COUNTS SHOWING HOW MANY TIMES EACH STATEMENT WAS EXECUTED, A NORMALIZED HISTOGRAM SHOWING PERCENTAGE OF CPU TIME SPENT IN EACH SOURCE STATEMENT AND AN INDICATION OF ANY SOURCE STATEMENT AT WHICH AN ABEND OCCURRED. ADDITIONALLY, SUMMARY REPORTS SHOW ALL UNEXECUTED PARAGRAPHS AND WHICH PARAGRAPHS CONSUMED THE MOST CPU TIME.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: CAPEX CORPORATION
CONTACT: CAPEX CORPORATION, 2613 N. 3RD ST., PHOENIX, AZ, 85004, USA, 602-264-7241
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CPA, TITLE: COBOL PROGRAM ARCHIVE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, STATIC ANALYSIS, MANAGEMENT, LIBRARY MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUMMARY: STORES COBOL PROGRAMS ON TAPE AND ALLOWS THE RETRIEVAL OF ANY PROGRAM BY A GIVEN SERIAL NUMBER OR DATE IT ENTERED THE HISTORY FILE.
DEVELOPER: USAF/ALC
CONTACT: TOM EMERSON, USAF/ALC, SM-ALC/ACDAB, BLDG 269B, MCLELLAN AFB, CA, 95652, USA, 916-643-3642
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: CPA-ADR, TITLE: CROSS-PROGRAM AUDITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING

FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, CROSS REFERENCE, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, DOS
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: THE CROSS-PROGRAM AUDITOR (CPA) IS A VERSATILE FACT FINDER WHICH CAN FOCUS ON ANY ASPECT OF A COBOL APPLICATION SYSTEM. CPA ALWAYS INVESTIGATES PROGRAMS IN TERMS OF THEIR FUNCTIONAL INTERACTION. IN SYSTEMS WHERE COMPONENT PROGRAMS ARE NUMEROUS, THEIR INTERACTION CAN BECOME COMPLEX. USING MANUAL PROCEDURES IN MAINTAINING SUCH SYSTEMS CAN BE INEFFICIENT, UNRELIABLE, AND VERY EXPENSIVE. CPA CAN INVESTIGATE ANY PROGRAMMING APPLICATION QUICKLY, ACCURATELY, AND ECONOMICALLY.
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: CPAL, TITLE: COMPUTER PROGRAM ASSEMBLY LIST
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: CPAL IS A CONFIGURATION MANAGEMENT TOOL WHICH IDENTIFIES FOR EACH PROGRAM ROUTINE THE FOLLOWING: CURRENT MODIFICATION IDENTIFICATION, THE NUMBER OF EXECUTABLE STATEMENTS, TOTAL NUMBER OF STATEMENTS, AND THE NUMBER OF MACHINE LANGUAGE INSTRUCTIONS. CPAL ACCESSES THE "FORTRAN CODE AUDITOR" AND "MACHINKO".
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CQD, TITLE: COBOL QUICK AND DIRTY, DOCUMENT AND IMPROVE READABILITY
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM NTIS, PB-232 024/2
TOOL SUMMARY: THE CQD PREPROCESSOR ASSISTS IN COBOL APPLICATION PROGRAMMING. MACRO- LIKE EXPANSIONS PERMIT THE IDENTIFICATION DIVISION, CONFIGURATION SECTION, FILE-CONTROL AND FILE DEFINITION AREAS TO BE CODED WITH (IN MOST CASES) A SINGLE RECORD. ABBREVIATIONS EXIST FOR FREQUENTLY USED COBOL RESERVED WORDS IN THE DATA AND PROCEDURE DIVISIONS. THE PROGRAMMER MAY ALSO SUPPLY ABBREVIATIONS FOR DATA-NAMES. OUTPUT CONSISTS OF A LISTING AND CARD IMAGES FOR THE COBOL COMPILER.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [NTIS80], NATIONAL TECHNICAL INFORMATION SERVICE, "A DIRECTORY OF COMPUTER SOFTWARE AND RELATED TECHNICAL REPORTS", PB80-110232, 800000
INFORMATION SOURCE: NTIS

ACRONYM: CRISPFLOW, TITLE: CRISPFLOW
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, PDL, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BASIC MINIMAL, FORTRAN
TOOL SIZE: CORE: 40K WORDS
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): ECL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: CONVERTS PDL-LIKE TEXTFILE INTO FLOWCHARTS DRAWN ON CDM PLOTTER OF UNIVAC 1108.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER, DEVELOPMENT SPECIFICATION
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: CROREF, TITLE: CROSS REFERENCE OF PROGRAM VARIABLES
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, SLEUTH
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: CROREF IDENTIFIES CROSS-REFERENCES OF PROGRAM VARIABLES (COMMON AND LOCAL) VS. SYMBOLIC ELEMENTS (SUBROUTINES, MAIN PROGRAM, ETC.). THIS OUTPUT IS NOT ONLY USEFUL IN DEVELOPMENT AND MAINTENANCE OF SOFTWARE SYSTEMS, BUT ADDITIONALLY IS REQUIRED BY DOCUMENTATION STANDARDS.

DOCUMENTATION: PROGRAM DESCRIPTION, USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, COMMAND, CONTROL COMMUNICATIONS D
CONTACT: W. A. HORNE, TRW, COMMAND, CONTROL COMMUNICATIONS D, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-2307
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: CRYSTAL (TM), TITLE: A TOOL FOR ESTIMATING PERFORMANCE OF PROPOSED APPLICATIONS
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, VHLL INPUT, SYSTEM SPECIFICATION, USER OUTPUT, DIAGNOSTICS, GRAPHICS, TABLES, STATIC ANALYSIS, MANAGEMENT, PERFORMANCE MANAGEMENT, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 810200
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: BGS SYSTEMS
TOOL SUMMARY: CRYSTAL (TM) IS A SOFTWARE DEVELOPMENT TOOL TO HELP PROJECT MANAGERS, SYSTEM DESIGNERS, AND CAPACITY PLANNERS SPECIFY AND PREDICT SYSTEM PERFORMANCE BEFORE AND DURING THE DEVELOPMENT PROCESS. CRYSTAL TAKES ESTIMATES OF SOFTWARE STRUCTURE AND MODULE RESOURCE USAGE, AND AUTOMATICALLY BUILDS A PERFORMANCE MODEL TO BE RUN BY OUR PERFORMANCE CALCULATION PACKAGE, BEST/1 (TM). INITIALLY, THESE ESTIMATES ARE OBVIOUSLY "BALLPARK", BUT EVEN THEN YOU CAN SEE WHAT WILL HAPPEN IF SOME ESTIMATES ARE OFF BY 50%, OR EVEN 100%. AS THE DEVELOPMENT PROCEEDS, AND SOME MODULES ACTUALLY GET CODED, THESE IMPRECISE ESTIMATES ARE REPLACED BY ACTUAL FIGURES, RESULTING IN A SUCCESSION OF IMPROVED PERFORMANCE PREDICTION. IF THE PREDICTED PERFORMANCE IS LESS THAN ACCEPTABLE, THEN THE PROJECT MANAGER HAS ADEQUATE TIME TO TAKE CORRECTIVE ACTION BEFORE A CRISIS DEVELOPS.
DOCUMENTATION: USER'S GUIDE (152)
REFERENCES: [BUZE81], J. P. BUSEN, ET. AL., "PREDICTING SOFTWARE PERFORMANCE WITH CRYSTAL (TM)", PROC OF THE 3RD INT CONF ON COMPUTER CAPACITY MANAGEMENT, 810400
DEVELOPER: BGS SYSTEMS, INC.
CONTACT: BGS SYSTEMS, INC., 1 UNIVERSITY OFFICE PARK, WALTHAM, MA, 02254, USA, 617-891-0000
INFORMATION SOURCE: PRODUCT ANNOUNCEMENT, TECHNICAL PAPER

ACRONYM: CS4, TITLE: DATABASE DESIGN TOOL
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, CSL, TRANSFORMATION, TRANSLATION, COMPILATION, MACHINE OUTPUT, OBJECT CODE OUTPUT, DATA OUTPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, LISTINGS, STATIC ANALYSIS, MANAGEMENT,

DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 750000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): IBM 360/370, DECSYSTEM-10/20, UNIVAC 11XX, DEC VAX-11
OS (OTHER SOFTWARE): TSO, EXEC 8, TOPS-10/20
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): CONTACT DATABASKONSULT DBK AB
TOOL SUPPORTED: YES, TOOL SUPPORT: DATABASKONSULT DBK AB
TOOL SUMMARY: CS4 IS A SYSTEMS DEVELOPMENT PACKAGE, DEVELOPED MAINLY AS A TOOL FOR QUICK AND FLEXIBLE IMPLEMENTATION OF PROTOTYPE SYSTEMS AS WELL AS MINOR PRODUCTION SYSTEMS. CS4 INCLUDES AN INTERPRETER FOR AN EASILY LEARNED GENERAL PURPOSE PROGRAMMING LANGUAGE, SPECIALLY DESIGNED FOR HANDLING ASSOCIATIVE DATABASES. IN A CS4 ASSOCIATIVE DATABASE INFORMATION IS REPRESENTED AS ASSOCIATIONS BETWEEN ENTITIES. THIS SIMPLE BUT POWERFUL REPRESENTATION FACILITATES HANDLING OF DATA OF ARBITRARY COMPLEXITY. SMALL, SELF-CONTAINED, PROCEDURES ARE BUILT UP AND STORED IN A PROCEDURE LIBRARY. PROCEDURES CAN CALL EACH OTHER ARBITRARILY, ALSO RECURSIVELY.
REFERENCES: [JANN81], JANNING, BERILD, NACHMENS, "INTRODUCTION TO ASSOC. DATABASES AND THE CS4 SYSTEM", STUDENTLITTERATUR, LUND, SWEDEN, 810000
[BERI78], BERILD, NACHMENS, "CS4-A TOOL FOR DATABASE DESIGN BY INFOLOGICAL SIMULATION", VLDB-3, TOKYO-77, 770000
[BERI77], BERILD, NACHMENS, "SOME PRACTICAL APPLICATIONS OF CS4 - A DBMS FOR ASSOCIATIVE DATABASES", ARCH AND MODELS IN DATABASE MGT SYS, NIJSSEN, NORTH-HOLLAND, 770000
[NACH80], NACHMENS, "ASSOCIATIVE DATABASES FOR CHANGING INFORMATION REQUIREMENTS", 13TH HAWAIIAN INTERNATIONAL CONFERENCE ON SYSTEMS SCIENCES, 800000
DEVELOPER: UNIVERSITY OF STOCKHOLM, DATABASKONSULT DBK AB
CONTACT: STIG BERILD, UNIVERSITY OF STOCKHOLM, DEPT OF INFORMATION PROCESSING, FACK, STOCKHOLM, 10691, SWEDEN, 46-8-150160
SAM NACHMENS, DATABASKONSULT DBK AB, HUVUDSTAGATAN 12, SOLNA, S-171 58, SWEDEN, 08-83 07 30
INFORMATION SOURCE: TOOL FAIR

ACRONYM: CSPP, TITLE: COBOL STRUCTURAL PROGRAMMING PRECOMPILER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, COBOL, STRUCTURED COBOL, ANS COBOL, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL ANS
TOOL PORTABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC

TOOL SUMMARY: THE CSPP IS A TOOL TO FACILITATE STRUCTURED PROGRAMMING IN ANS COBOL, X.3.23 - 1968. THE ADDITIONS TO COBOL ARE IN THE FORM OF STRUCTURING VERBS, AS DEFINED IN THE RADC STRUCTURED PROGRAMMING SERIES. THE CSPP ACCEPTS THE AUGMENTED ANS COBOL AS INPUT AND PRODUCES A SOURCE PROGRAM IN ANS COBOL.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[AFDA77], AIR FORCE DATA AUTOMATION AGENCY, "COMPENDIUM OF ADS PROJECT MANAGEMENT TOOLS AND TECHNIQUES", 770500
DEVELOPER: ROME AIR DEVELOPMENT CENTER, ROME, NY
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: CTC, TITLE: COBOL TO COBOL TRANSLATOR
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, TRANSLATION, CONVERSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL ANSI
TOOL SIZE: 120 K MEMORY
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, DOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: DATAWARE, INC.
TOOL SUMMARY: DESIGNED TO AID THE TRANSITION OF PROGRAMS FROM ONE OPERATING SYSTEM TO ANOTHER. DESIGNED TO PROVIDE A HIGH PERCENTAGE OF CONVERSION OF THE ORIGINAL PROGRAM SYNTAX. PACKAGE CAN BE CUSTOMIZED TO SPECIFIC IN-HOUSE STANDARDS. DIFFERENT VENDORS ALREADY ADDRESSED BY THE TRANSLATOR INCLUDE BURROUGHS, CDC, DEC, HONEYWELL, IBM, NCR AND UNIVAC. CURRENTLY RUNS ON A 360/370 COMPUTER USING APPROXIMATELY 120,000 POSITIONS OF CORE MEMORY, DISK STORAGE (WORK AREAS), PRINTER AND CARD OR TAPE I/O DEVICES. CAN BE INSTALLED ON ANY COMPUTER THAT SUPPORTS ANS COBOL AND HAS A SIMILAR CONFIGURATION AS OUTLINED ABOVE.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: DATAWARE, INC.
CONTACT: LYNANNE M. PHILLIPS, DATAWARE, INC., 2565 ELMWOOD AVE., BUFFALO, NY, 14217, USA, 716-876-8722
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: CUE, TITLE: CONFIGURATION UTILIZATION EVALUATOR
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS, OS/MVS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: CUE (CONFIGURATION UTILIZATION EVALUATOR) MEASURES COMPUTER HARDWARE/ SOFTWARE PERFORMANCE TO ALLOW AN INSTALLATION TO GAIN MAXIMUM EFFICIENCY FROM ITS CURRENT SYSTEM. HARDWARE MEASURE REPORTED BY CUE INCLUDE CPU, CHANNEL, AND DEVICE ACTIVITY. CUE ALSO MEASURES SOFTWARE RESOURCES, SVC LOADING, AND LOGICAL CHANNEL USAGE. THESE MEASUREMENTS ALLOW AN INSTALLATION TO PINPOINT CURRENT SYSTEM BOTTLENECKS AND TO DETERMINE POSSIBLE RECONFIGURATION REQUIREMENTS. THE CUE PACKAGE CONSISTS OF TWO PROGRAMS: AN EXTRACTOR AND AN ANALYZER, WHICH ARE RUN AS SEPARATE JOBS OR JOB STEPS. THE EXTRACTOR SAMPLES SYSTEM ACTIVITY OVER A USER- SPECIFIED TIME PERIOD, AND OUTPUTS ITS SAMPLED INFORMATION TO AN EXTRACTOR DATA SET. THE CUE ANALYZER THEN PROCESSES THE DATA IN THE EXTRACTOR DATA SET TO PRODUCE REPORTS DESCRIBING IN DETAIL THE ACTIVITY THAT WAS SAMPLED BY THE EXTRACTOR. THE EXTRACTOR MUST RUN AS THE HIGHEST PRIORITY JOB IN THE SYSTEM.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: BOOLE AND BABBAGE
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: DA, TITLE: DATA ANALYZER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, GRAPHICS, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BAL
TOOL SIZE: CORE: 82-108K-DOS, 120-140K-OS
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS, DOS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE DATA ANALYZER IS A MULTI-PURPOSE INFORMATION RETRIEVAL, ANALYSIS, AND PRESENTATION SYSTEM WITH MANY LEVELS OF LANGUAGE, SO THAT APPLICATION-AREA EXECUTIVES AND PROGRAMMERS CAN PRODUCE REPORTS FROM ONE OR MORE FILES OR DATA BASES. THE BASIC LANGUAGE LEVEL IS COMPLETELY FREE-FORM. WITH IT, USERS CAN REQUEST RECORD SELECTION, SORTING, UNLIMITED COMPUTATIONS, AND FORMATTED REPORTS. USERS CAN ALSO REQUEST BAR GRAPHS, CROSS-TABULATIONS, ADDRESS LABELS, PREPRINTED FORMS, AND COMPLEX STATISTICAL FUNCTIONS. MORE TECHNICAL LEVELS ALLOW PROGRAMMERS DIRECT CONTROL OVER PROCESSING, INCLUDING IF/GO TO LOGIC. A MACRO PROCESSOR IS INCLUDED TO PERMIT USER

EXPANSION OF THE SYSTEM'S FEATURES. THE SYSTEM'S OPTIONS ALLOW FOR PROCESSING MULTIPLE FILES SIMULTANEOUSLY AND FOR MATCHING STANDARD FILE STRUCTURES WITH DATA BASE FILES. OPTIONAL GRAPHIC CAPABILITIES INCLUDE POINT PLOTS, DEVIATION GRAPHS, MAPS, ORGANIZATION CHARTS, AND MULTI-FUNCTION BAR GRAPHS.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER
DEVELOPER: PROGRAM PRODUCT, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: DARTS, TITLE: DESIGN-AIDS FOR REAL-TIME SYSTEMS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, DESIGN SPECIFICATION, USER OUTPUT, GRAPHICS, HIERARCHICAL TREE, TABLES, STATIC ANALYSIS, DATA FLOW ANALYSIS, COMPLEXITY MEASUREMENT, DYNAMIC ANALYSIS, SIMULATION, RESOURCE UTILIZATION, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PL/1
TOOL PORTABLE: NO, TOOL SIZE: 17,000 SOURCE LINES
COMPUTER (OTHER HARDWARE): IBM 360/370 (3270 TERMINAL, VERSATEC PLOTTER)
OS (OTHER SOFTWARE): OS/MVS
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): IN-HOUSE TOOL
TOOL SUPPORTED: PARTIAL, TOOL SUPPORT: THE CHARLES STARK DRAPER LABORATORY
TOOL SUMMARY: DARTS USES A MIX OF HIERARCHY, CONTROL AND COMMUNICATIONS PRIMITIVES AND DATA STRUCTURES TO REPRESENT REAL-TIME SYSTEMS. REQUIREMENTS ARE EXPRESSED AS A FUNCTIONAL HIERARCHY AND DESIGNS AS A HIERARCHY OF COMMUNICATING MODULES. THROUGH A FRIENDLY, MENU-ORIENTED INTERFACE, A USER CAN REPRESENT A SYSTEM, PERFORM DATA FLOW CHECKING, CALCULATE SOFTWARE SCIENCE COMPLEXITY MEASURES, GENERATE SIMULATIONS OF THE DESIGN FOR RESPONSE TIME, THROUGHPUT AND UTILIZATION, AND REQUEST DATA FLOW TABLES AND GRAPHICAL TREE-STRUCTURED OUTPUT IN VARIOUS SIZES.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [SZUL80], P.A. SZULEWSKI, ET. AL., "QA GUIDELINES AND QUALITY METRICS FOR EMBEDDED REAL-TIME SOFTWARE DESIGN", REPORT R-1376, THE C. S. DRAPER LAB., INC., 800500
[FURT81], F. C. FURTEK, J. B. DE WOLF, AND P. BUCHAN, "DARTS: A TOOL FOR SPECIFICATION AND SIMULATION OF REAL-TIME SYSTEMS", PROCEEDINGS OF THE AIAA COMPUTER IN AEROSPACE III CONFERENCE, 811000
DEVELOPER: THE CHARLES STARK DRAPER LABORATORY, INC
CONTACT: J. BARTON DE WOLF, THE CHARLES STARK DRAPER LAB., INC., 555 TECHNOLOGY SQUARE, CAMBRIDGE, MA, 02139, USA, 617-258-1115
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: DAS, TITLE: DESIGN ANALYSIS SYSTEM
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, CODE INPUT, VHLL INPUT, REQUIREMENTS SPECIFICATION, DESIGN SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, CONSISTENCY CHECKING, AUDITING, MANAGEMENT, CHANGE CONTROL, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780800
IMPLEMENTATION LANGUAGE: FORTRAN, SIMSCRIPT II.5
TOOL SIZE: CORE: 400K
COMPUTER (OTHER HARDWARE): CDC CYBER (DISK: 2MB)
OS (OTHER SOFTWARE): TSO, OS/MVS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED TO HUGHES SUBCONTRACTORS OR UPON APPROVAL OF ICAM PROJECT
TOOL SUPPORTED: YES, TOOL SUPPORT: HUGHES
TOOL SUMMARY: DAS IS A GENERAL SYSTEM MODELLING TOOL WITH INTERACTIVE GRAPHICS AND AUTOMATIC MODEL GENERATION AS ITS KEY FEATURES. IT USES ADBMS, A GENERALIZED DATA BASE MANAGER FROM PSL/PSA, AS ITS MEANS TO MAINTAIN THE MODEL OR REQUIREMENTS SPECIFICATION - AND HAS AUTOMATIC DOCUMENTATION SUPPORT TOOLS. ITS PRIMARY PURPOSE IT TO ESTABLISH THE FEASIBILITY OF REQUIREMENTS AND, IN PARTICULAR, THE DYNAMIC NATURE OF THE SYSTEM UNDER STUDY. IT HAS BEEN USED FOR MANUFACTURING, OPERATIONS ANALYSIS, COMPUTER SYSTEM DESIGN ANALYSIS, AND FOR SOFTWARE DESIGN ANALYSIS. OTHER IMPORTANT FEATURES ARE: EASY TO LEARN AND USE, INTERACTIVE ANALYSIS VIA ON-LINE PLOTTED GRAPHICS, REDUCES ANALYSIS TIME BY AS MUCH AS A FACTOR OF 10.
DOCUMENTATION: USERS (100)
REFERENCES: [WILL78], R. WILLIS, "DAS - AN AUTOMATED SYSTEM TO SUPPORT DESIGN ANALYSIS", PROC. 12TH ASILOMAR CONFERENCE, 781106
[WILL78B], R. WILLIS, "DAS - AN AUTOMATED SYSTEM TO SUPPORT DESIGN ANALYSIS", PROC. 15TH DESIGN AUTOMATION CONFERENCE, LAS VEGAS, 780621
[WILL78C], R. WILLIS, "DAS - AN AUTOMATED SYSTEM TO SUPPORT DESIGN ANALYSIS", PROC. 3RD INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING, 780509
DEVELOPER: HUGHES AIRCRAFT CO.
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: DATA DESIGNER, TITLE: DATA DESIGNER
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, GRAPHICS, DESIGN CHARTS, TABLES, STATIC ANALYSIS, MANAGEMENT, DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT

TOOL SUPPORTED: YES, TOOL SUPPORT: DATABASE DESIGN INC.
TOOL SUMMARY: DATA DESIGNER IS AN INTEGRATED STANDALONE SOFTWARE SYSTEM FOR THE INTERACTIVE DEVELOPMENT OF LOGICAL DATA BASE DESIGNS. THE RESULTING LOGICAL DESIGNS ARE COMPATIBLE WITH VIRTUALLY ANY DATA MANAGEMENT SYSTEM INCLUDING THOSE USING THE HIERARCHICAL, NETWORK, OR RELATIONAL MODEL OF DATA. DATA DESIGNER ACCEPTS FREE-FORM INPUT USER VIEWS OF DATA FOR ONE OR MORE APPLICATIONS. THROUGH INTERACTIVE DESIGN PROCEDURES, IT DELETES REDUNDANT DATA ITEMS, REDUNDANT POINTERS, AND INDICATES ERRONEOUS DEFINITIONS OF USE, AND NON-STANDARDIZED DATA ITEMS. DATA DESIGNER PRODUCES A SERIES OF MANAGEMENT REPORTS AND PLOTS WHICH INCLUDE DATA ITEM RELATIONSHIPS, TRAFFIC VOLUMES, AND RELATIVE RESPONSE TIMES FOR DATA ENTITIES. DATA DESIGNER ALSO PRODUCES ASSISTANCE IN RESTRICTING EXISTING DATA BASES.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: DATABASE DESIGN INC.
CONTACT: M.L. BOGDASARIAN, DATABASE DESIGN INC., 2395 HURON PARKWAY, ANN ARBOR, MI, 48104, USA, 313-971-5363
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: DATAMACS, TITLE: DATAMACS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, TABLES, STATIC ANALYSIS, SCANNING, I/O SPECIFICATION ANALYSIS, DYNAMIC ANALYSIS, REGRESSION TESTING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BAL
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: DATAMACS IS A DATA FILE GENERATOR FOR TESTING COBOL PROGRAMS ACCORDING TO SPECIFICATIONS SET UP BY PROGRAMMER. THE PROGRAM IS WRITTEN FOR "LOAD-AND-GO" COBOL OPERATIONS UNDER DOS, OS, OR THEIR VIRTUAL- STORAGE COUNTERPARTS. FREE STANDING FILES AND TEST FILES FOR NON-COBOL PROGRAMS CAN ALSO BE GENERATED. NORMALLY, THE DATAMACS PROGRAM READS A COBOL SOURCE PROGRAM THAT INCLUDES SPECIAL CONTROL CARDS INTERSPERSED IN THE ENVIRONMENT AND DATA DIVISIONS, SEGREGATES THE CONTROL CARDS AND THE COBOL SOURCE CODE, GENERATES DATA FILES BASED ON THE SPECIFICATIONS CONTAINED IN THE CONTROL CARDS AND THEN TRANSFERS CONTROL TO THE COBOL COMPILER FOR COMPILATION AND EXECUTION. ANY TYPE OF FILE CAN BE CREATED BECAUSE DATAMACS USES THE IBM ACCESS METHODS TO WRITE THE FILES. THE PROCESS CAN BE HALTED FOLLOWING TEST FILE GENERATION TO CREATE FREE-STANDING FILES. DATAMACS CAN ALSO BE USED TO CREATE TEST FILES FOR PROGRAMS NOT WRITTEN IN COBOL.
DOCUMENTATION: USER'S MANUAL

REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: MANAGEMENT AND COMPUTER SERVICES, INC.
CONTACT: MANAGEMENT AND COMPUTER SERVICES, INC., SUITE 390, BOX 826, VALLEY FORGE, PA, 19482, USA, 215-265-2910
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DAVE, TITLE: DOCUMENTATION, ANALYSIS, VALIDATION, AND ERROR DETECTION
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, DATA FLOW ANALYSIS, INTERFACE ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN 66
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): COPYRIGHT, UNIV OF COLORADO
TOOL SUPPORTED: YES, TOOL SUPPORT: DEPT OF COMPUTER SCIENCE, UNIV OF COLORADO, BOULDER, CO
TOOL SUMMARY: DAVE PERFORMS DATA FLOW ANALYSIS OF FORTRAN PROGRAMS IN ORDER TO DETECT VARIABLE USAGE ANOMALIES. THE SYSTEM PROVIDES GOOD DOCUMENTATION, RELIABILITY, AND EASE OF USE AND FAIR COST EFFECTIVENESS AND USER SUPPORT. DAVE DETECTS DATA USAGE ANOMALIES SUCH AS: REFERENCES TO UNDEFINED VARIABLES, UNREFERENCED VARIABLE DEFINITIONS, UNINITILIZED VARIABLES (LOCAL OR COMMON), AND UNUSED VARIABLES.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
REFERENCES: [OSTE76], L. J. OSTERWEIL AND L. D. FOSDICK, "DAVE: A VALIDATION, ERROR DETECTION, AND DOCUMENTATION SYS FOR FTN PROG", SOFTWARE - PRACTICE AND EXPERIENCE, 760000
[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[OSTE76A], L. J. OSTERWEIL AND L. D. FOSDICK, "SOME EXPERIENCE WITH DAVE - A FORTRAN PROGRAM ANALYZER", PROC OF THE 1976 NATIONAL COMPUTER CONFERENCE, 760000
[FOSD76], L. D. FOSDICK AND L. J. OSTERWEIL, "DATA FLOW ANALYSIS IN SOFTWARE RELIABILITY", ACM COMPUTING SURVEYS, 760900
DEVELOPER: UNIV OF COLORADO AT BOULDER
CONTACT: LEON OSTERWEIL, UNIVERSITY OF COLORADO, DEPT OF COMPUTER SCIENCE, BOULDER, CO, 80309, USA, 303-492-7514
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS, AIAA SURVEY OF SOFT DEV TOOLS, RADC-TR-80-13, INTERIM REPORT

ACRONYM: DCD, TITLE: DATA CORRELATION AND DOCUMENTATION

CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, FLOW CHARTS, TABLES, FILE LAYOUTS, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE DCD (DATA CORRELATION AND DOCUMENTATION) SYSTEM READS COBOL SOURCE PROGRAMS AND PRODUCES, BESIDES THE SOURCE LISTING, A FLOW ANALYSIS OF THE DATA DIVISION AND THE PROCEDURE DIVISION. IT ELIMINATES ALL SEARCHING BY THE PROGRAMMER AND PROVIDES A COMPLETE WORKING DOCUMENT SO THE PROGRAMMER CAN DEVELOP AND MAINTAIN PROGRAMS EASIER. THE PACKAGE CREATES THREE LEVELS OF DOCUMENTATION: THE FLOW ANALYSIS ALREADY REFERRED TO; LAYOUTS OF ALL FILES, RECORDS, AND WORKING STORAGE DATA; AND THE DATA CORRELATION ALPHABETIC CROSS-REFERENCE.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: BOOLE AND BABBAGE
CONTACT: T. FRED NOBLE, CGA SOFTWARE PRODUCTS GROUP, 1370 PICCARD DRIVE, ROCKVILLE, MD, 20850, USA, 301-948-9600
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DDPM, TITLE: DISTRIBUTED DATA PROCESSING MODEL
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, CODE INPUT, VHLL INPUT, REQUIREMENTS SPECIFICATION, DESIGN SPECIFICATION, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE, COMPLEXITY MEASUREMENT, MANAGEMENT, CHANGE CONTROL, DYNAMIC ANALYSIS, SIMULATION, RESOURCE UTILIZATION, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 760900
IMPLEMENTATION LANGUAGE: PLS
TOOL SIZE: CORE: 300KB
COMPUTER (OTHER HARDWARE): AMDAHL 470 (DISK: 2MB)
OS (OTHER SOFTWARE): TSO, OS/MVS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PROPRIETARY PRODUCT; CONTRACTS FOR SERVICE ONLY
TOOL SUPPORTED: YES, TOOL SUPPORT: HUGHES AIRCRAFT CO.
TOOL SUMMARY: THE DDPM IS A GENERALIZED DISCRETE EVENT SIMULATION MODEL THAT CAN BE USED FOR EVALUATION OF A LARGE CLASS OF COMPUTER SYSTEM DESIGNS. THE KEY FEATURES ARE (1) TABULAR INPUTS OF CRITICAL SYSTEM SPECIFICATIONS, (2) PREPROGRAMMED MODELS OF COMMON DISTRIBUTED SYSTEM FUNCTIONS, AND (3) AN ARCHITECTURE SUBMODEL WHICH PERMITS EASILY RECONFIGURED SYSTEM STRUCTURES AND AUTOMATIC MESSAGE ROUTING THROUGH THE STRUCTURE. IT IS ESPECIALLY USEFUL FOR

DISTRIBUTED DESIGN EVALUATION OF SOFTWARE AND SOFTWARE ALLOCATION, HARDWARE SELECTION, PROTOCOL METHODOLOGY, OPERATING SYSTEM FEATURES, AND DATA BASE DESIGNS.
DOCUMENTATION: USER MANUAL (250)
REFERENCES: [WILL78D], R. WILLIS, "DAS - AN AUTOMATED SYSTEM TO SUPPORT DESIGN ANALYSIS", PROC. 15TH DESIGN AUTOMATION CONFERENCE, 780621
[WILL79], R. WILLIS, "DESIGN EVAL. OF DISTRI. DATA BASES AND DATA MNGMT. DESIGN USING HUGHES D", PERFORMANCE EVALUATION REVIEW (SIGMETRICS), VOL 8, NO. 3, 790000
DEVELOPER: HUGHES AIRCRAFT CO.
CONTACT: RON WILLIS, HUGHES AIRCRAFT COMPANY, P.O. BOX 3310, FULLERTON, CA, 92634, USA, 714-732-1488
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: DECA, TITLE: DESIGN EXPRESSION AND CONFIGURATION AID
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: DECA (DESIGN EXPRESSION AND CONFIGURATION AID) IS A TOOL MADE AVAILABLE TO THE SOFTWARE DESIGNER, WHICH PROVIDES HIM WITH A CONSISTENT METHOD OF EXPRESSING DOCUMENTATION AND VERIFYING HIS DESIGN. THE PROGRAM REQUIRES THE USE OF TOP-DOWN DESIGN REPRESENTATION AS INPUT, AND RETURNS COMPLETE AND EASILY READABLE DOCUMENTATION. SOME OF THE BENEFITS TO BE DERIVED FROM THE USE OF DECA ARE: ESTABLISHED COMMUNICATIONS BETWEEN THE DESIGNER AND THE USER DURING THE DESIGN PROCESS, SYSTEM RELIABILITY (THROUGH ANALYSIS OF THE DESIGN CORRECTNESS), AND THE RETAINING OF CURRENT DOCUMENTATION ALONG WITH THE DEVELOPED PROGRAMS (THIS FACILITATES PROGRAM MAINTENANCE).
DOCUMENTATION: USER'S MANUAL, INSTALLATION INSTRUCTIONS
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: BCS, INC.
CONTACT: BCS, INC., P.O. BOX 24346, SEATTLE, WA, 98124, USA, 206-773-9090
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DECKBOY COMPAR, TITLE: DECKBOY FILE COMPARATOR
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON,

STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 771100
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL PORTABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PROPERTY OF BCS AND MAY NOT BE AVAILABLE FOR USE OUTSIDE BOEING
TOOL SUMMARY: THE DECKBOY COMPARATOR FIND DIFFERENCES BETWEEN TWO FILES, INCLUDING LINES THAT EXIST IN ONE FILE BUT NOT THE OTHER AND DIFFERENCES WITHIN LINES CONTAINED IN BOTH FILES. EACH FILE INPUT TO THE COMPARATOR MAY BE SPLIT INTO MODULES AND COMPARED ON A MODULE-BY-MODULE BASIS. DIFFERENCES BETWEEN FILES (VERSIONS) ARE LISTED IN THE ORDER OF DISCOVERY AND IDENTIFIED AS DELETED, ADDED, OR COMMON. THE COMPARATOR ATTEMPTS TO MAINTAIN LINE SYNCHRONIZATION BETWEEN THE FILES BY CONTINUOUSLY ATTEMPTING TO FIND AN IMAGE IN VERSION 2 MATCHING ONE IN VERSION 1.
DOCUMENTATION: TECHNICAL DESCRIPTION, USERS MANUAL
REFERENCES: [BOEI79], BOEING COMPUTER SERVICES COMPANY, ADVANCED TECHNOLOGY AND APPL. DIV., "AUTOMATED SOFTWARE TOOLS CATALOG", BCS 10236, 790800
DEVELOPER: BOEING COMPUTER SERVICES
CONTACT: GARY KAMPEN, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346, SEATTLE, WA, 98124, USA, 206-575-5393
INFORMATION SOURCE: BCS TOOLS CATALOG

ACRONYM: DEPCHT, TITLE: DEPCHT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, SLEUTH
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: DEPCHT WILL PRODUCE QUICK AND ACCURATE SUBROUTINE CROSS-REFERENCE INFORMATION. THREE TYPES OF PRINTED OUTPUT ARE: AN ALPHABETICAL CROSS-REFERENCE OF EACH SUBROUTINE AND THOSE IT REFERENCES; AN ALPHABETICAL CROSS-REFERENCE OF EACH SUBROUTINE AND THOSE THAT REFERENCE IT; A PICTORIAL DESCRIPTION OF PROGRAM LINKAGE.
DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: GARY BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346, SEATTLE, WA, 98124, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DI-3000, TITLE: DI-3000 GRAPHICS SOFTWARE SYSTEM
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION

FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, FORMATTING, USER OUTPUT, GRAPHICS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800500
IMPLEMENTATION LANGUAGE: FORTRAN 66
TOOL PORTABLE: YES, TOOL SIZE: 35,000 SOURCE STATEMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE REQUIRED
TOOL SUPPORTED: YES, TOOL SUPPORT: PRECISION VISUALS, INC.
TOOL SUMMARY: DI-3000 IS AN INTEGRATED SYSTEM OF GRAPHICS SOFTWARE TOOLS. DEVELOPED AS A PACKAGE OF 160 USER-CALLABLE SUBROUTINES, DI-3000 IS BOTH DEVICE AND MACHINE INDEPENDENT. IT OFFERS A COMPREHENSIVE SET OF FEATURES FOR DEVELOPING GRAPHICS APPLICATIONS, INCLUDING FULL COLOR, COMPLETE 3D, AREA FILL AND PATTERNING, GRAPHICS ARTS QUALITY TEXT, SNAPSHOT DEBUGGING AND A PICTURE FOR DIGITIZING, MENU FUNCTIONS AND COMPUTER-AIDED DESIGN. DI-3000 NETWORK ALSO PERMITS APPLICATION PROGRAM INTERACTION WITH SEVERAL GRAPHICS DEVICES CONCURRENTLY. USING INTELLIGENT DEVICE DRIVERS, DI-3000 TAKES FULL ADVANTAGE OF THE HARDWARE FEATURES OF ANY GRAPHICS DEVICE.
DOCUMENTATION: USER'S GUIDE (334 PAGES), IMPLEMENTATION GUIDE (104 PAGES), REFERENCE CARD
DEVELOPER: PRECISION VISUALS, INC.
CONTACT: PRECISION VISUALS, INC., 250 ARAPAHOE AVE., BOULDER, CO, 80302, USA, 303-449-0806
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: DICTANL/LOCATE, TITLE: DICTIONARY ANALYSIS PROGRAM AND LOCATE PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: AS AN AID TO IMPROVING THE QUALITY OF DOCUMENTS PRODUCED USING THE TRW/TSS MANUSCRIPT PREPARATION SYSTEM, TWO SOFTWARE PROGRAMS HAVE BEEN DEVELOPED. THE DICTIONARY ANALYSIS PROGRAM WILL ASSIST IN IDENTIFICATION OF TYPOGRAPHICAL AND SPELLING ERRORS. THE LOCATE PROGRAM WILL GIVE THE LOCATION, BY SECTION AND LINE NUMBER, OF SPECIFIED WORDS WITHIN A DOCUMENT. THE DICTIONARY ANALYSIS PROGRAM WILL COMPILE AND PRINT A COMPLETE ALPHABETIZED LIST OF ALL THE UNIQUE WORDS IN A DOCUMENT. EACH UNIQUE WORD IS ALSO COMPARED AGAINST AN EXISTING DICTIONARY OF CORRECTLY SPELLED WORDS. EACH WORD THAT IS NOT IN THE DICTIONARY WILL BE PRECEDED BY AN ASTERISK ON THE LISTING OF WORDS WHICH IS AUTOMATICALLY ROUTED TO THE HIGH-SPEED PRINTER. THE LOCATE PROGRAM WILL ACCEPT ANY NUMBER OF WORDS AND THEN GIVE THE SECTION AND LINE NUMBER FOR EVERY OCCURRENCE OF EACH SELECTED WORD IN A DOCUMENT.

DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DIFFS (TM), TITLE: DIFFS (TM)
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, SCOBOL
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE CONSULTING SERVICES
TOOL SUMMARY: DIFFS IS A SOFTWARE PRODUCTIVITY AID FOR PROGRAMMERS AND AUDITORS. DIFFS COMPARES TWO FILES AND SHOWS THEIR DIFFERENCES. SHOULD EITHER FILE CONTAIN EXTRA RECORDS, DIFFS SEARCHES FOR THE POINT WHERE THE FILES MATCH AGAIN, DISPLAYS THE EXTRA RECORDS, AND CONTINUES COMPARING. DIFFS' USER SELECTABLE OPTIONS SIMPLIFY DIFFICULT COMPARISON PROBLEMS. FOR PROGRAM FILES, SEQUENCE NUMBER FIELDS AND LEADING AND TRAILING BLANKS CAN BE IGNORED. FOR REPORT AND DATA FILES, SELECTED COLUMN RANGES CAN BE COMPARED OR IGNORED. MULTIPLE BLANKS CAN BE TREATED AS ONE BLANK FOR TEXT FILE COMPARISONS. DIFFERENCES IN FILES CAN BE PRINTED IN EITHER CHARACTER FORMAT OR IN HEXADECIMAL.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: SOFTWARE CONSULTING SERVICES
CONTACT: MARTHA J. CICHELLI, SOFTWARE CONSULTING SERVICES, 910 WHITTIER DRIVE, ALLENTOWN, PA, 18103, USA, 215-797-9690
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: DIRCOM, TITLE: DIRCOM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN

COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM READS VARIABLE NAMES AND BY USING THE DIRECTORY GENERATED BY BLKGEN - PUNCHES OUT FORTRAN COMMON STATEMENTS FOR THE DESIRED VARIABLES. THIS IS USED FOR THE MAINTENANCE OF LARGE COMMON AREAS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: BRUNSWICK DEFENSE DIV.
CONTACT: JAMES N. CHURCHYARD, BRUNSWICK DEFENSE DIV., 3333 HARBOR BLVD., COSTA MESA, CA, 92626, USA, 714-546-8030
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: DOCGEN, TITLE: DOCUMENTATION GENERATOR
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: THE DOCGEN PROGRAM SELECTIVELY EXTRACTS INTERNAL PROGRAM DOCUMENTATION FROM A USER SOURCE CODE TAPE. THE USER INDICATES THOSE COMMENTS TO BE LISTED BY INPUTING A MASK(S) OF "N" NON-BLANK CHARACTERS AND DOCGEN WILL EXTRACT AND LIST ALL COMMENT CARDS WHICH CONTAIN THESE CHARACTERS IN CARD COLUMNS 1 TO 7 (N LESS THEN 7).
DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: JAMES N. BRUNSWICK DEFENSE DIV., 3333 HARBOR BLVD., COSTA MESA, CA, 92626, USA, 213-536-1116
J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DOCU/TEXT, TITLE: DOCU/TEXT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, RPG
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE FUNCTION OF THIS SYSTEM, FORMERLY CALLED DOCU/MENTOR, IS TO USE DATA FROM PRODUCTION JCL, PROCLIBS, SYSTEM CATALOG, VTOCS AND SORT PDS'S ALONG WITH OPTIONAL

USER DESCRIPTIVE DATA TO DOCUMENT PRODUCTION RUN STREAMS. FOR OPERATIONS, DOCU/TEXT: 1) DISPLAYS EACH DATA SET WITH KEY ATTRIBUTES, IN ORDER OF OCCURRENCE, THROUGHOUT A SYSTEM; 2) LISTS SYMBOLICS AND THEIR VALUES; 3) PROVIDES RUN SEQUENCE OF JOBS WITHIN SYSTEM, PROCS WITHIN JOB, AND STEPS WITHIN PROC; AND 4) INCLUDES IN ONE LOCATION A LISTING OF REPORTS ISSUED BY A SYSTEM IN OPERATIONAL SEQUENCE. IT ALSO PROVIDES A SIMILAR LISTING FOR INPUT CARD SETS AND CARD SETS PUNCHED. FOR APPLICATION SYSTEMS PROGRAMMING, DOCU/TEXT: 1) PROVIDES THE CAPABILITY TO KEEP SYSTEMS- LEVEL FLOWCHARTS CURRENT AND ACCURATE; 2) LISTS DATA SETS IN ORDER OF FIRST OCCURRENCE AND USAGE THROUGHOUT A SYSTEM, THEREBY PROVIDING INSIGHT INTO CONSEQUENCES OF A PROPOSED FILE CHANGE; 3) LISTS CONTROL STATEMENTS BY STEP; AND 4) ANNOTATES FLOW CHARTS WITH VTOC AND CATALOG DATA.
DOCUMENTATION: MAINTENANCE MANUAL
DEVELOPER: GENASYS COMPUTER PROCESSING
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: DOCUMENT, TITLE: DOCUMENT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN 3
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): ECL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM READS A SEQUENCE OF SYMBOLIC ELEMENTS AND WRITES OUT SPECIFIC LINES (INDENTED) FROM THESE ELEMENTS PROVIDING SUBROUTINE (HIGH LEVEL) DOCUMENTATION USING ONLY THE COMMENTS INTERNAL TO THE SYMBOLIC ELEMENTS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: DOCUMENTER, TITLE: DOCUMENTER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 791000
IMPLEMENTATION LANGUAGE: BASIC
TOOL SIZE: 200 STATEMENTS
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): RSTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES

TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THIS PROGRAM SOLICITS INFORMATION CONCERNING THE DEVELOPMENT OF A COMPUTER SYSTEM BASED ON THE BSI STANDARD FOR PROGRAM DOCUMENTATION. IF THE USER REPLIES WITH A QUERY, EXPLANATION OF THE SECTION IS GIVEN. WHEN A THIRD QUERY IS GIVEN, A MAXIMUM EXPLANATION IS GIVEN. AFTER DATA HAS BEEN COLLECTED FOR A PROJECT IT IS PROCESSED BY A TEXT PROCESSOR TO PRODUCE A GOOD DOCUMENTATION LAYOUT.
DOCUMENTATION: TECHNICAL PAPER (5 PAGES)
REFERENCES: [PAYN80], A. J. PAYNE, "A DOCUMENTATION AID FOR TEACHING AND PRODUCING COMP. SCI. PROJECTS", ACM COMPUTER SCIENCE CONFERENCE, 800000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: DOCUMENTER A, TITLE: DOCUMENTER A
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: "DOCUMENTER A" AIDS AND EXPEDITES THE METHODICAL AND UNIFORM DOCUMENTATION OF SOURCE PROGRAM UNITS. THIS COMPILER-INDEPENDENT TOOL PROVIDES TWO BASIC FACILITIES. THE FIRST IS A MECHANISM FOR GENERATING SOURCE PROGRAM DOCUMENTATION UNITS IN THE FORMAT OF A TEMPLATE PREDEFINED BY THE USER. SOURCE PROGRAMS ARE CODED IN A STRAIGHTFORWARD SUCCINCT FORM AND PRESENTED TO "DOCUMENTER A" FOR AUTOMATIC EXPANSION INTO A COMPLETE DOCUMENTATION UNIT AS DETAILED IN THE PREDEFINED TEMPLATE. THE SECONDARY FACILITY PROVIDED BY THIS TOOL PERMITS THE RELOCATION SOURCE STATEMENTS FROM THEIR CODED LOCATION TO ANY OTHER LOCATION WITHIN THE SOURCE TEXT. "DOCUMENTER A" IS AVAILABLE FOR A NUMBER OF PROGRAMMING LANGUAGES SUCH AS FORTRAN, COBOL AND OTHERS. "DOCUMENTER A" SERVES AS AN EXCELLENT QUALITY ASSURANCE INSTRUMENT WHICH ALLOWS MANAGEMENT TO SET, FACILITATE, AND ENFORCE SOURCE PROGRAM DOCUMENTATION STANDARDS.
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: DOCUMENTOR, TITLE: DOCUMENTOR

CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL SUMMARY: THIS PROGRAM SELECTIVELY EXTRACTS AND PRINTS FORTRAN PROGRAM DOCUMENTATION FROM INFORMATION CONTAINED IN THE SOURCE CODE AND SOURCE CODE COMMENTS. IT HAS THE CAPABILITY TO TEXT EDIT THE INFORMATION TO BE LISTED.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DOSSIER, TITLE: DOSSIER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, MANAGEMENT, LIBRARY MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BAL
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): DOS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: DOSSIER IS AN AUTOMATIC PROGRAM LIBRARY MANAGEMENT INFORMATION SYSTEM THAT GENERATES 16 UNIQUE REPORTS TO ENABLE MANAGEMENT TO ESTABLISH OPERATIONAL STANDARDS AND RUN-TIME DOCUMENTATION. IT IS A DOS OR DOS/VS MANAGEMENT TOOL THAT HELPS TO MAKE IT PRACTICAL FOR USERS TO MAINTAIN THEIR CURRENT OPERATIONAL ENVIRONMENTS, AND IT CAN ALSO BE USED FOR DISK CONVERSIONS AND/OR CONVERSIONS TO OS. INFORMATION RELATING TO PROGRAMS AND FILES IS DERIVED FROM THE DOS OR DOS/VS CORE IMAGE AND RELOCATABLE LIBRARIES. THE PROGRAM AND FILE ANALYSIS (PFA) COMPONENT OF DOSSIER PRODUCES A SERIES OF REPORTS SHOWING THE CHARACTERISTICS OF PHASES AND MODULES AND A DESCRIPTION OF EACH OF THEIR STANDARD I/O FILE DEFINITIONS. CORRESPONDING RECORDS ARE OUTPUT TO EITHER A DISK OR TAPE DATA SET AND SORTED BY THE REPORT WRITER PROGRAM TO PRODUCE ADDITIONAL PFA REPORTS. A LIBRARY AUDIT PROGRAM READS SUCCESSIVE GENERATIONS OF THIS FILE IN ORDER TO PREPARE LIBRARY ACTIVITY REPORTS.

DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: COMPUTER CONCEPTS, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: DPAD, TITLE: DATA PROCESSING ALGORITHM DEVELOPMENT PROGRAM
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, SIMULATION, COMPUTER SYSTEM SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, SALSIM
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE PROGRAM PROVIDES THE MEANS OF ANALYZING A DP SOFTWARE/HARDWARE SYSTEM BEFORE IT IS DEVELOPED, IN ORDER TO VERIFY THE SYSTEM COMPONENT PERFORMANCE, SYSTEM LOGIC, SUBSYSTEMS INTERACTIONS AND DATA STRUCTURES. THE SOFTWARE PACKAGE MODELED UNDER THE DPAD CONTRACT WAS COMPOSED OF THE SOFTWARE TASKS WHICH CONSTITUTE THE TACTICAL PROCESS, A MODIFICATION OF THE OPERATING SYSTEM AND CONTROL ROUTINE FOR INPUT AND OUTPUT. THE TACTICAL SOFTWARE MODEL SIMULATES THE COMPUTATIONAL AND LOGICAL FUNCTIONS PERFORMED TO PROCESS AND ANALYZE THE STREAM OF DATA RECEIVED DURING AN ENGAGEMENT.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SIMULATION SOFTWARE DEPT.
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DPNDCY, TITLE: DPNDCY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: THE PRIMARY FUNCTION OF DPNDCY IS TO PROVIDE ANALYSIS AND COMPATIBILITY CHECKS OF THE COMMON DATA BASE ASSEMBLED BY BLKGEN AND SPECPN. VARIOUS OUTPUTS ARE PROVIDED TO DISPLAY ERRORS IN EITHER OF THE DATA TYPES. TWO OF THE OUTPUTS ARE SUITABLE FOR FORMAL DOCUMENTATION: A COMMON VARIABLE VS. SUBROUTINE CROSS-REFERENCE, AND A SUBROUTINE NAME VS. COMMON VARIABLE CROSS-REFERENCE.
DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE

TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DQM, TITLE: DESIGN QUALITY METRICS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, USER OUTPUT, GRAPHICS, DESIGN CHARTS, TABLES, STATIC ANALYSIS, COMPLEXITY MEASUREMENT, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): AMDAHL 470 (HP2647A OR HP2648A GRAPHIC TERMINAL)
OS (OTHER SOFTWARE): OS/MVS (ADBMS AND PLOT-10)
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): HUGHES PROPRIETARY
TOOL SUPPORTED: NO
TOOL SUMMARY: ALTHOUGH METHODOLOGIES WITH QUALITATIVE GUIDELINES ABOUND, FEW, IF ANY, ARE SUPPORTED WITH QUANTITATIVE, MEASURABLE MEANS OF ADHERENCE. INDEED, HUGHES' STRUCTURED DESIGN METHODOLOGY FOR SOFTWARE DECOMPOSITION CONTAINS GUIDELINES SUCH AS 'MAXIMIZE MODULARITY' AND MINIMIZE COUPLING' - BOTH OF WHICH HAVE NO APPARENT QUANTIFIABLE MEASURE OF COMPLIANCE. THE DESIGN QUALITY METRICS SYSTEM (DQM) IS AN INITIAL STEP TO SOLVE THIS PROBLEM. AS SHOWN ALGORITHMS HAVE BEEN DEVELOPED WHICH, WHEN APPLIED TO THE STRUCTURE CHART OF SOFTWARE MODULES, PRODUCE A QUANTIFICATION OF THE DESIGN USING A PLOT OF COMPLEXITY AS A FUNCTION OF TREE DEPTH. THE RESULTS OF THIS TECHNIQUE HAVE BEEN VALIDATED ON TWO MAJOR SOFTWARE DEVELOPMENT EFFORTS AND HAVE BEEN SHOWN TO CORRELATE CLOSELY WITH THE NUMBER OF ERRORS ENCOUNTERED IN SOFTWARE TESTING. IN OTHER WORDS, DQM QUANTIFIES QUALITATIVE GUIDELINES AND, THEREFORE, PROVIDES A PREDICTIVE TOOL WHICH CAN REDUCE THE NUMBER OF ERRORS AND THE COST.
DOCUMENTATION: USERS MANUAL
REFERENCES: [YINB79], YIN, B., J. W. WINCHESTER, "SOFTWARE DESIGN QUALITY METRICS SYSTEM", SECOND INTERNATIONAL CONFERENCE ON MATHEMATICAL MODELING, 790700
[YINB78], YIN, B., J. W. WINCHESTER, "THE ESTABLISHMENT AND USE OF QUALITY MEASURES TO EVALUATE DESIGN QUALITY", PROC. ACM SOFTWARE QUALITY WORKSHOP, 781100
DEVELOPER: HUGHES AIRCRAFT COMPANY
CONTACT: JAMES W. WINCHESTER, HUGHES AIRCRAFT COMPANY, POST OFFICE BOX 3310, FULLERTON, CA, 92634, USA, 714-732-3232
INFORMATION SOURCE: TOOL FAIR

ACRONYM: DRIVER, TITLE: AUTOMATED TEST, COMPARE AND MONITOR PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, FORTRAN, EXTENDED V4 FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON, MANAGEMENT, TEST DATA MANAGEMENT, DYNAMIC ANALYSIS, REGRESSION TESTING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: DESIGNED FOR USE IN A CONTROLLED I/O ENVIRONMENT SUCH AS ACCESS TO A GLOBAL DATA BASE. IT MAY BE USED FOR DEVELOPMENT TESTING AND FINAL CHECKOUT OF UNIT SOURCE CODE. A UNIT OF CODE MAY CONSIST OF A CONTROL ROUTINE AND A NUMBER OF SUBROUTINES COMPRISING A FUNCTIONAL MODULE. ANY NUMBER OF CONSECUTIVE TEST CASES MAY BE EXECUTED IN A SINGLE RUN. TEST CASES MAY BE ISOLATED BY THE PRE-ZERO OPTION OR INFORMATION MAY BE TRANSMITTED TO SUCCESSIVE CASES IF DESIRED. THE RESULTS OF EACH TEST CASE IS COMPARED TO EXPECTED VALUES AND DISCREPANCIES ARE FLAGGED. INITIAL, FINAL AND EXPECTED VALUES ARE DISPLAYED FOR EACH DISCREPANCY. THE STATEMENT LABEL EXECUTION PATH IS DISPLAYED FOR EACH TEST CASE. AT RUNS END, A SUMMARY IS DISPLAYED INDICATING THE NUMBER OF EXECUTIONS OF EACH STATEMENT LABEL FLAGGING OUT UNEXPECTED LABELS. ALSO, A SUMMARY OF THE TEST CASES INDICATING WHICH, IF ANY, CONTAINED ERRORS. THIS IS SIMILAR TO THE AUTORETEST TOOL AVAILABLE FOR THE IBM 360 COMPUTERS.
DOCUMENTATION: USER'S BRIEF
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW GUIDANCE SOFTWARE DEV DEPT
CONTACT: WALT BARROW, TRW GUIDANCE SOFTWARE DEV DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3676
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: DYNA, TITLE: DYNAMIC ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, FORTRAN 66, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN 77
TOOL PORTABLE: YES
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR INTERNAL BOEING USE
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY

TOOL SUMMARY: DYNA IS A TOOL FOR FORTRAN PROGRAMS WHICH ALLOWS THE USER TO SEE THE DYNAMIC BEHAVIOR OF A MODULE WHILE IT IS EXECUTING TEST DATA. THE TEST DATA USED IS THAT OF THE USERS OR DEVELOPERS. NO MODIFICATION TO EITHER THE PROGRAM OR ITS TEST DATA ARE REQUIRED. DYNA OPERATES IN THREE STEPS. DURING THE PREPROCESSING STEP, PROBES (ADDITIONAL FORTRAN STATEMENTS) ARE AUTOMATICALLY INSERTED IN THE SOURCE CODE AND THE "INSTRUMENTED SOURCE" CODE IS COMPILED. DURING THE EXECUTION STEP, COUNTS ARE MADE OF NUMBER OF TIMES EACH STATEMENT IS EXECUTED BY THE TEST DATA. THE COUNTS MAY BE ACCUMULATED WITH THE COUNTS FROM PREVIOUS EXECUTIONS, IF DESIRED. DURING THE POST PROCESSING STEP, THE EXECUTION DATA IS FORMATTED INTO REPORTS.
DOCUMENTATION: USER'S MANUAL, REQUIREMENTS SPECIFICATION, DESIGN SPECIFICATION
REFERENCES: [STUC73], L. G. STUCKI, "AUTOMATIC GENERATION OF SELF METRIC SOFTWARE", PROC OF 1973 SYMP ON COMP SOFT RELIABILITY, 730000
[STUC81], LEON G. STUCKI AND HARRY D. WALKER, "CONCEPTS AND PROTOTYPES OF ARGUS -- A PROGRESS REPORT", SOFT ENG ENV, ED. HORST HUENKE, NORTH-HOLLAND PUB CO, 810000
DEVELOPER: BOEING COMPUTER SERVICES
CONTACT: LEON G. STUCKI, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346 M/S 9C-03, SEATTLE, WA, 98124, USA, 206-575-5118
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS, TOOL FAIR

ACRONYM: EASYTROL, TITLE: EASYTROL
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: CORE: 85K
COMPUTER (OTHER HARDWARE): IBM 360/370, HONEYWELL 6XXX
OS (OTHER SOFTWARE): OS, DOS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: EASYTROL IS A PROJECT MANAGEMENT SYSTEM WHICH PROVIDES EARLY WARNINGS AND HIGHLIGHTS POTENTIAL TROUBLE SPOTS. EASYTROL ALLOWS A PHASE AND TASK APPROACH TO PROJECT PLANNING AND CONTROL. IT OFFERS THE USER THE OPTION OF OVERALL BROAD PLANNING AT THE BEGINNING OF THE PROJECT AND THE DETAIL PLANNING OF EACH PHASE JUST PRIOR TO BEGINNING THE PHASE. IT ALSO ASSISTS IN THE DETAILED PLANNING STAGE. ALL PERSONNEL AND EQUIPMENT UTILIZATION SCHEDULES MUST BE SUBMITTED AT THE TASK LEVEL. THE SYSTEM DESIGN IS BASED ON FREE FORMATTED INPUT. THE USER IS REQUIRED TO ENTER THE HOURS WORKED ON A SPECIFIC TASK FOR THE PERIOD. THERE ARE TEN STANDARD REPORTS, NINE OF WHICH

ARE EXCEPTION REPORTS. THE KEY REPORT, PROJECT STATUS REPORT, PRESENTS THE PROJECT AT PHASE AND TASK LEVELS, AND IN RELATION TO PLAN IN THE AREAS OF MAN HOURS, EQUIPMENT UTILIZATION, CALENDAR DAYS, AND BUDGET. OTHER REPORTS PRESENT DETAIL BUDGET INFORMATION, INDIVIDUAL AND PROJECT LEVEL PERSONNEL INFORMATION.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: KEITH AND ASSOCIATES, INC
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: EAVS, TITLE: EXTENSIBLE AUTOMATED VERIFICATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, JOVIAL, FORTRAN IV, JOVIAL J3B-2, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, JOVIAL, USER OUTPUT, DIAGNOSTICS, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: IFTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: EAVS IS A SYSTEM OF COMPATIBLE TOOLS FOR ANALYZING SOURCE PROGRAMS WRITTEN IN EITHER THE J3B-2 DIALECT OF THE JOVIAL LANGUAGE OR IBM FORTRAN IV. EAVS IS INTENDED TO BE APPLIED DURING PROGRAM TESTING TO AID IN IDENTIFYING UNTESTED PATHS AND SPECIFYING TEST CASES THAT WILL IMPROVE TESTING COVERAGE. ALL OF THIS IS PROVIDED BY ANALYSIS OF PROGRAM STRUCTURE, INSTRUMENTATION OF THE SYSTEM WITH SOFTWARE PROBES THAT MEASURE TESTING COVERAGE, AND GENERATION OF COMPREHENSIVE REPORTS WHICH PINPOINT PATHS IN THE PROGRAM STRUCTURE THAT REMAIN TO BE EXERCISED. IN ADDITION, GUIDANCE IS PROVIDED FOR THE GENERATION OF TEST CASES THAT WILL ASSURE COVERAGE OF THE UNTESTED PORTIONS.
DOCUMENTATION: USER'S GUIDE REFERENCE MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: GENERAL RESEARCH CORPORATION
CONTACT: CAROLYN GANNON, GENERAL RESEARCH CORPORATION, SANTA BARBARA, CA, USA, 805-964-7724
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: ECA AUTOMATION, TITLE: ECA AUTOMATION
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: TEST DATA GENERATION, SUBJECT, CODE INPUT, FORTRAN, FORTRAN 77, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, QUALITY MEASUREMENT, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: DESIGN
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUPPORTED: NO

TOOL SUMMARY: THE SYSTEM BEING DEFINED WILL ANALYSE TWO SOFTWARE CATEGORIES: (1) SOFTWARE DEVELOPED BY THE AGENCY FOR WHICH IT WILL PROVIDE SUPERVISORY CONTROL OF THE PRODUCTION. (2) ACQUIRED SOFTWARE FOR WHICH IT WILL HELP GUARANTEE THAT RULES AND STANDARDS IMPOSED BY THE AGENCY ON ITS SUBCONTRACTORS ARE FOLLOWED. FOR BOTH CATEGORIES OF SOFTWARE, IT WILL ALSO HAVE TO SUPPLY NECESSARY INFORMATION IN VIEW OF MAINTENANCE REQUIREMENTS. THUS, THE FOUR MAIN FUNCTIONS PERFORMED BY THE SYSTEM WILL BE: (A) SOFTWARE DOCUMENTATION ASSISTANCE. (B) RESPECT OF RULES AND STANDARDS LAID DOWN BY THE AGENCY. (C) AUTOMATIC ERROR CHECKING, BY STATIC ANALYSIS OF SOURCE CODE. (D) GENERATION OF SETS OF TEST DATA. A FIFTH FUNCTION, USING THE SYNTHESIS OF THE INFORMATION OBTAINED WILL PROVIDE A QUALITY MEASUREMENT OF THE ANALYSED PROGRAMS. THESE DIFFERENT FUNCTIONS WILL BE ABLE TO BE PUT IN SERVICE PROGRESSIVELY AND BE IMPLEMENTED BY DIFFERENT TOOLS.
DEVELOPER: EUROPEAN SPACE AGENCY
CONTACT: MICHEL POIZE, EUROPEAN SPACE AGENCY, 315,BUREAUX DE LA COLLINE, SAINT-CLOUD, CEDEX, 92213, FRANCE,
INFORMATION SOURCE: EUROPEAN SPACE AGENCY

ACRONYM: EFFIGY, TITLE: EFFIGY
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, PL/1, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, ASSERTION CHECKING, SYMBOLIC EXECUTION, TRACING, BREAKPOINT CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 730000
IMPLEMENTATION LANGUAGE: PL/1
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): VM/CMS
TOOL SUMMARY: THE EFFIGY SYSTEM IS AN INTERACTIVE SYMBOLIC EXECUTION TOOL INCORPORATING STANDARD DEBUG TOOLS AND EXPANDED TO INCLUDE ASSERTION CHECKING, A SIMPLE PROGRAM TESTING MANAGER AND A PROGRAM VERIFIER. NORMAL PROGRAM EXECUTION IS PROVIDED AS A SPECIAL CASE. EFFIGY ACCEPTS ONE STATEMENT AT A TIME, BUILDING A SYMBOLIC EXECUTION TREE THAT DEFINES THE PATHS THROUGH THE PROGRAM. A TEST MANAGER IS AVAILABLE FOR SYSTEMATICALLY EXPLORING THE ALTERNATIVES PRESENTED IN THE SYMBOLIC EXECUTION TREE. THE PROGRAM VERIFIER GENERATES VERIFICATION CONDITIONS FROM USER SUPPLIED ASSERTIONS IN CONJUNCTION WITH THE SYMBOLIC EXECUTION.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[KING75], J. C. KING, "A NEW APPROACH TO PROGRAM TESTING", PROC OF THE INTERNATIONAL CONFERENCE ON RELIABLE SOFTWARE, 750400
[KING76], J. C. KING, "SYMBOLIC EXECUTION AND PROGRAM TESTING", COMMUNICATIONS OF THE ACM, 760700

DEVELOPER: IBM
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: ENFORCE, TITLE: ENFORCE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, COBOL 80, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL ANSI
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: THE PRODUCTIVITY GROUP, INC. (TPG)
TOOL SUMMARY: ENFORCE IS A TABLE-DRIVEN UTILITY DEVELOPED TO ASSIST SYSTEMS DEVELOPMENT, QUALITY ASSURANCE, EDP AUDIT AND SYSTEMS MAINTENANCE. ENFORCE IS AN AUTOMATED TOOL FOR PROGRAM CODE EVALUATION AND MODIFICATION, STANDARDS ENFORCEMENT AND MAINTENANCE THROUGH THE APPLICATION OF STANDARD AND USER-SUPPLIED COBOL CODING RULES AND CONVENTIONS. ENFORCE PROPERLY ALIGNS, RESEQUENCES, RENAMES, AND EXPANDS RELATIONAL SYMBOLS. IT WILL MODIFY DATA, PARAGRAPH, SECTION AND FILE NAMES, AS WELL AS DETECT UNACCEPTABLE COBOL CODE. ENFORCE WILL PREPARE PROGRAMS (AT YOUR OPTION) FOR THE PROPOSED ANSI COBOL-80 COMPILER STANDARDS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: THE PRODUCTIVITY GROUP, INC. (TPG)
CONTACT: THE PRODUCTIVITY GROUP, INC. (TPG), 373 FIFTH AVENUE, SUITE 1140, NEW YORK, NY, 10016, USA, 212-724-6657
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: ESAP, TITLE: EVENT SEQUENCE ANALYSIS PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: ESAP IS A GENERAL PURPOSE GRAPHICS PROGRAM WHICH AUTOMATICALLY GENERATES PLOTS ACCORDING TO USER SPECIFICATIONS. A WIDE VARIETY OF FIGURES IS AVAILABLE TO THE USER, INCLUDING BASIC FLOWCHARTING SYMBOLS. THESE FIGURES CAN BE ARRANGED IN ANY PATTERN TO REPRESENT SEQUENCE FLOW OR OTHER GRAPHIC DESIGN IDEAS. THEIR POSITION, SIZE AND CONNECTIONS TO OTHER FIGURES MAY BE SPECIFIED BY THE USER AND ANNOTATIONS MAY BE PLACED WITHIN OR NEAR ANY OF THE FIGURES. DASHED AND DOTTED LINE CAPABILITIES EXIST, AND IN ADDITION TO THE REGULAR PRINT FORMAT, FIVE SPECIAL CHARACTER FONTS ARE AVAILABLE TO

ENHANCE PROPOSALS AND PRESENTATIONS. CALCOMP AND VERSATEC PLOTS ARE AVAILABLE. A LARGE SAVINGS CAN BE REALIZED WHEN COMPLETED CHARTS MUST BE CHANGED OR DUPLICATED. FILE CHANGES ARE EASY TO IMPLEMENT AND THE NEW CHARTS ARE GENERATED RAPIDLY FROM THE STORED ESAP FILES.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: EVP, TITLE: EQUIVALENCE VERIFICATION PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN IV, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: OUTPUT FROM THE EQUIVALENCE VERIFICATION PROGRAM IS USED TO VERIFY THE CONSISTENCY OF THOSE GLOBAL SYMBOLS THAT ARE DEFINED BETWEEN SUBROUTINES WITH THE USE OF EQUIVALENCE STATEMENTS. THIS OUTPUT IS USEFUL IN THE DEVELOPMENT OR MAINTENANCE OF SOFTWARE SYSTEMS.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: EXPEDITER, TITLE: EXPEDITER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TRACING, REGRESSION TESTING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BAL
TOOL PORTABLE: YES, TOOL SIZE: CORE: 10K-40K
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: EXPEDITER PROVIDES FACILITIES FOR UNIT TESTING OF MODULES AND PROGRAM COMPONENT TESTING IN THE DEVELOPMENT ENVIRONMENT. IT ALSO INCLUDES FEATURES FOR PROBLEM ISOLATION AND VERIFICATION OF FIXES IN THE MAINTENANCE

CONTEXT. NO CHANGES TO SOURCE PROGRAMS ARE REQUIRED. IT IS RESPONSIBLE FOR IMPROVING PRODUCTIVITY IN A COBOL ENVIRONMENT FROM 10 LINES OF PROCEDURE DIVISION CODE PR PROGRAMMER PR DAY TO 45 LINES.
DOCUMENTATION: USER'S GUIDE (125), REFERENCE CARD (4), SPF TUTORIAL, TSO HELP, PROGRAMMED INSTRUCTION COURSE (200)
DEVELOPER: APPLICATION DEVELOPMENT SYSTEMS, INC.
CONTACT: EDWARD F. HARRIS, APPLICATION DEVELOPMENT SYSTEMS, INC, 1530 MERIDIAN AVENUE, SAN JOSE, CA, 95125, USA, 408-264-2272
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: FACES, TITLE: FORTRAN AUTOMATED CODE EVALUATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, DATA FLOW ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE FORTRAN AUTOMATED CODE EVALUATION SYSTEM (FACES) WAS DEVELOPED TO DETECT CODING ERRORS AND UNSOUND CODING PRACTICES IN ANSI FORTRAN SOURCE CODE. THE SYSTEM IS COMPRISED OF A PREPROCESSOR, A PROCESSOR, AND A REPORT GENERATOR. EITHER UNIT MODULES OR INTERRELATED MODULES CAN BE RUN AS A DATA SET FOR FACES. FACES IS ORGANIZED INTO A DRIVER SECTION WITH THREE SUBSYSTEM COMPONENTS. THE MAIN DRIVER IS RESPONSIBLE FOR FILE MANIPULATIONS AND INTERPRETING USER COMMANDS. ONE OF THE COMPONENTS IS CALLED THE AUTOMATIC INTERROGATION ROUTINE. ITS PURPOSE IS TO EXAMINE TABLES GENERATED BY A FRONT-END PORTION OF FACES, AND LOOK FOR TYPES OF CODING CONSTRUCTIONS SELECTED BY THE USER. IF THE SPECIFIED CONSTRUCTIONS ARE FOUND, DIAGNOSTIC MESSAGES ARE RECORDED ON THE FLAG FILE. A REPORT GENERATOR GENERATES USER REPORTS. AREAS OF CODING THAT CANNOT BE EFFECTIVELY EVALUATED ARE ALSO REPORTED TO THE USER.
DOCUMENTATION: SYSTEM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: COSMIC, UNIVERSITY OF GEORGIA
CONTACT: REX WALKER, COSMIC, UNIVERSITY OF GEORGIA, SUITE 112, BARROW HALL, ATHENS, GEORGIA, 30602, USA, 404-542-3265
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG, RADC-TR-80-13, INTERIM REPORT

ACRONYM: FADEBUG-I, TITLE: FACOM AUTOMATIC DEBUG

CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: PATH STRUCTURE ANALYSIS, SUBJECT, CODE INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON, I/O SPECIFICATION ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
COMPUTER (OTHER HARDWARE): FACOM 230-60
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: FUJITSU LTD.
TOOL SUMMARY: FADEBUG-I HAS TWO PRIMARY FUNCTIONS AS A DEBUG AID. COMPARING THE SET OF OUTPUT DATA PRODUCED BY A PROGRAM WITH USER-SPECIFIED OUTPUT DATA IS IDENTIFIED AS ITS MOST IMPORTANT FUNCTION. THE OTHER FUNCTION INVOLVES AUTOMATIC ISOLATION AND DEFINITION OF ALL POSSIBLE EXECUTION PATHS FROM ENTRY TO EXIT IN A PROGRAM MODULE. THESE CAPABILITIES AID IN DETECTING AND REMOVING PROGRAM BUGS. IN THE MODULE TEST STAGE OF PROGRAM DEVELOPMENT THE FOLLOWING AREAS OF DIFFICULTY ARE IDENTIFIED: (1) EXAMINATION AND VERIFICATION OF OUTPUT DATA FROM MODULE TEST EXECUTION. (2) EXAMINATION OF MODULE PROCESSING PATHS FOR LOGICAL ERRORS. (3) EVALUATION OF MODULE LOGIC PATHS FOR OMISSIONS. FADEBUG-I IS DESIGNED TO REDUCE OR ELIMINATE THESE DIFFICULTIES THROUGH ITS TEST FUNCTION OR ROUTE DEFINITION FUNCTION.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[ITOH77], ITOH, "FADEBUG-I, A NEW TOOL FOR PROGRAM DEBUGGING", PROCEEDINGS IEEE SYMPOSIUM COMPUTER SOFTWARE REL., PP 38-43, 770000
DEVELOPER: FUJITSU LTD.
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: FAME, TITLE: FRONT-END ANALYSIS AND MODELING ENVIRONMENT
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, USER OUTPUT, DIAGNOSTICS, GRAPHICS, HIERARCHICAL TREE, CONTROL MAP, STATIC ANALYSIS, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
TOOL PORTABLE: NO, TOOL SIZE: MIN VIRTUAL MEMORY - 256K
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC CYBER, DEC VAX-11
OS (OTHER SOFTWARE): VM/CMS, NOS, VMS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): OBJECT CODE AVAILABLE UNDER LICENSE, TIME SHARED USAGE UNDER CONTRACT
TOOL SUPPORTED: YES, TOOL SUPPORT: HIGHER ORDER SOFTWARE
TOOL SUMMARY: FAME, THE HIGHER ORDER SOFTWARE, INC. FRONT-END ANALYSIS AND MODELING ENVIRONMENT, IS AN INTERACTIVE COMPUTER AIDED DESIGN TOOL THAT ALLOWS USERS TO BUILD, ANALYZE, VALIDATE, STORE AND GRAPHICALLY DISPLAY MODELS OF SYSTEMS. USE OF FAME PROMOTES HIGHER

PRODUCTIVITY IN THE DEVELOPMENT OF SYSTEMS BECAUSE IT IS EASY TO LEARN, AND ALLOWS A SPECTRUM OF USERS TO BUILD MANY TYPES OF MODELS NECESSARY FOR SYSTEM LIFE CYCLE DEVELOPMENT AND MANAGEMENT, AND INSURES CONSISTENCY BETWEEN THEM. THE TECHNIQUES EMPLOYED BY HOS, INC. HAVE BEEN DEVELOPED OVER A NUMBER OF YEARS WITH A VIEW TOWARD PROVIDING A COMPLETE METHODOLOGY FOR SPECIFICATION OF COMPLEX, LARGE SCALE SYSTEMS. IT HAS EFFECTIVELY BEEN USED FOR A VARIETY OF APPLICATIONS RANGING IN SIZE FROM SMALL AND SIMPLE TO LARGE REAL-TIME SYSTEMS.
DOCUMENTATION: SYSTEM DESCRIPTION
DEVELOPER: HIGHER ORDER SOFTWARE
CONTACT: JACK ROSENBAUM, HIGHER ORDER SOFTWARE, INC., 131 JERICHO TURNPIKE, JERICHO, NY, 11753, USA, 516-997-7825
INFORMATION SOURCE: TOOL FAIR

ACRONYM: FASP, TITLE: FACILITY FOR AUTOMATED SOFTWARE PRODUCTION
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, TEXT INPUT, DATA INPUT, CODE INPUT, TRANSFORMATION, TRANSLATION, EDITING, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, OBJECT CODE OUTPUT, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, COMPARISON, CROSS REFERENCE, MANAGEMENT, ERROR CHECKING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TUNING, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COMPASS, KCL
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): KRONOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THE FASP IS AN INTEGRATED SET OF SOFTWARE TOOLS WHICH PROVIDES AN ADVANCED PROGRAMMING SYSTEM AND A SOFTWARE MANAGEMENT INFORMATION SYSTEM FOR PRODUCTION AND LIFE CYCLE MAINTENANCE OF PROJECT SOFTWARE. IT PROVIDES SUPPORT FOR THE NAVY'S HIGH ORDER LANGUAGES AND STANDARD MILITARY COMPUTERS AND INCLUDES A COMPREHENSIVE SET OF SOFTWARE ENGINEERING AND MANAGEMENT TOOLS. FASP IS A FUNCTIONALLY-ORIENTED SOFTWARE PRODUCTION SYSTEM WHICH CAN BE USED IN EITHER AN INTERACTIVE OR BATCH MODE OF OPERATION AND IS ACCESSIBLE FROM ANY LOCATION THROUGH THE USE OF TERMINALS. FASP SUPPORT CAPABILITIES INCLUDE EDITORS/LIBRARIANS, TRANSLATORS/PREPROCESSORS, SYSTEM GENERATORS, SOFTWARE EMULATORS/DEBUGGERS, TEST ANALYZERS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
[STEU80], H. G. STUEBING, "A MODERN FACILITY FOR SOFTWARE PRODUCTION AND MAINTENANCE", PROCEEDINGS OF COMPSAC, 811000
DEVELOPER: NAVAL AIR DEVELOPMENT CENTER

CONTACT: J. BERGEY, NAVAL AIR DEVELOPMENT CENTER, ADVAN. SOFT. TECH. DIV, CODE 503, WARMINSTER, PA, 18974, USA, 215-441-3145
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY, TECHNICAL LITERATURE

ACRONYM: FAST, TITLE: FORTRAN ANALYSIS SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, DATA FLOW ANALYSIS, INTERFACE ANALYSIS, CONSISTENCY CHECKING, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SUMMARY: THE FAST SYSTEM CREATES A DATA BASE OF THE ATTRIBUTES OF MODULES, STATEMENTS AND NAMES IN A FORTRAN PROGRAM AND INTERACTIVELY PROCESSES A WIDE RANGE OF QUERIES CONCERNING THESE ATTRIBUTES. THE FAST DATA BASE IS GENERATED FROM THE FORTRAN SOURCE PROGRAM BY USING: (1) THE FACES PARSER (2) A PROGRAM TO MAP THE OUTPUT OF THE PARSER ONTO SYSTEM 2000 LOAD STRING (3) THE SYSTEM 2000 DATA MANAGEMENT SYSTEM. THE FAST COMMAND/QUERY LANGUAGE, WHICH IS USED TO QUERY THE DATA BASE, DEFINES APPROXIMATELY 10 ATTRIBUTES OF FORTRAN NAMES AND STATEMENTS. THESE ATTRIBUTES CAN BE COMBINED IN LOGICAL EXPRESSIONS TO QUALIFY OR ISOLATE VERY BROAD OR VERY NARROW PROGRAM CONTEXTS. THE COMMAND LANGUAGE INTERPRETER WAS IMPLEMENTED THROUGH THE USE OF THE BOBSW PARSER GENERATOR.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[BROW78], J. C. BROWNE, "FAST: A SECOND GENERATION PROGRAM ANALYSIS SYSTEM", PROCEEDINGS THIRD INTER. CONF. ON SOFT. ENG., PP 142-148, 780500
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: FAVS, TITLE: FORTRAN AUTOMATED VERIFICATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: RUN TIME ANALYSIS, SUBJECT, CODE INPUT, FORTRAN, DMATRAN, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, RESTRUCTURING, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE, TYPE ANALYSIS, STRUCTURE CHECKING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780000
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN
TOOL PORTABLE: NO, TOOL SIZE: CORE: 52K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX (DISK: 250K)
OS (OTHER SOFTWARE): GCOS
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.

TOOL SUMMARY: FAVS, AN INTEGRATED COLLECTION OF COMPUTER PROGRAMS, WAS DEVELOPED FOR THE PURPOSE OF ASSURING THAT SOFTWARE SYSTEMS WRITTEN IN FORTRAN ARE COMPREHENSIVELY TESTED. FAVS PROVIDES (1) STATIC DETECTION OF UNREACHABLE STATEMENTS, SET/USE ERRORS, MODE-CONVERSION ERRORS, AND EXTERNAL REFERENCE ERRORS, (2) A MEANS OF MEASURING THE EFFECTIVENESS OF TEST CASES BY SOURCE CODE INSTRUMENTATION, (3) ASSISTANCE IN THE CONSTRUCTION OF TEST DATA THAT WILL THOROUGHLY EXERCISE THE SOFTWARE, AND (4) AUTOMATED DOCUMENTATION. IN ORDER TO AID IN THE PRODUCTION OF APPLICATION SOFTWARE THAT ADHERES TO MODERN PROGRAMMING TECHNIQUES, FAVS ALSO PROVIDES FOR THE TRANSLATION FROM DMATRAN (A STRUCTURED EXTENSION OF FORTRAN) TO FORTRAN AND FROM FORTRAN TO DMATRAN.
DOCUMENTATION: VOL. 1, FINAL REPORT (49), VOL. 2, FAVS USER'S MANUAL (138), VOL. 3, DMATRAN USER'S GUIDE (46)
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: GENERAL RESEARCH CORPORATION
CONTACT: FRANK S. LAMONICA, RADC/ISIE, GRIFFISS AFB, NY, 13441, USA, 315-330-7834
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS, RADC-TR-80-13, INTERIM REPORT

ACRONYM: FCA, TITLE: FORTRAN CODE AUDITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING, STRUCTURE CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX, HONEYWELL 6XX
TOOL SUMMARY: THE FORTRAN CODE AUDITOR, AN AUTOMATED TEST TOOL, IS USED FOR THE COST EFFECTIVE ENFORCEMENT OF FORTRAN PROGRAMMING STANDARDS AND CONVENTIONS APPROPRIATE TO THE AIR FORCE SOFTWARE ENVIRONMENT. IT DOES NOT MODIFY CODE. USING PREDEFINED CODING STANDARDS AND CONVENTIONS, IT SIMPLY ADVISES THE USER WHERE THESE STANDARDS AND CONVENTIONS HAVE NOT BEEN ADHERED TO. THE MAJOR ADVANTAGE OF FAVORING AN AUTOMATED AUDITOR OVER MANUAL METHODS, BESIDES COST EFFECTIVENESS, IS COMPLETE OBJECTIVITY AND UNAMBIGUITY. THE STANDARDS CAN BE VIEWED AS BEING CODING ENFORCEMENTS IN FOUR AREAS: STANDARDS DEFINING QUANTITY AND PLACEMENT OF COMMENTARY, STANDARDS IDENTIFYING PHYSICAL PLACEMENT AND GROUPING OF CODE ELEMENTS ON THE SOURCE CODE LISTING, STANDARDS LIMITING MODULE SIZE AND PLACING RESTRICTIONS ON THE USE OF CERTAIN INSTRUCTIONS WITH THE END RESULT OF PROVIDING THE OPTIMIZATION OF CODE RELATIVE TO EXECUTION TIME, AND STANDARDS REQUIRING THE USE OF STRICT RULES FOR THE TOP-DOWN DESIGN AND IMPLEMENTATION OF A SYSTEM OF PROGRAMS.

DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW DATA MGMT SYS DEPT
CONTACT: PAUL SMITH, TRW DATA MGMT SYS DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-2380
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FLOBOL, TITLE: COBOL FLOWCHARTER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, ANSI COBOL, USER OUTPUT, GRAPHICS, FLOW CHARTS, TABLES, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00, UNIVAC 11XX, HONEYWELL 6XXX, HONEYWELL 6XX
TOOL SUMMARY: FLOBOL IS AN AUTOMATIC FLOWCHARTER FOR COBOL SOURCE PROGRAMS; IN ADDITION FLOBOL OPTIONALLY PRODUCES A COMPREHENSIVE CROSS-REFERENCE LISTING. THE FLOWCHART PRODUCED PROVIDES A COMPLETE FLOWLINE THROUGHOUT THE PROGRAM. AND FROM CONNECTORS ARE PROVIDED WHERE NEEDED TO REFLECT ENTRIES AND EXITS TO CLOSED SUBPROGRAMS. ALL GO TO, PERFORM AND SWITCH CONNECTORS INDICATE LINE NUMBERS OF THE STATEMENT REFERENCED. THE SYSTEM IS COMPOSED OF THREE COBOL PROGRAMS WITH IMBEDDED COBOL PARTS. INPUT TO FLOBOL IS THE SOURCE FOR THE COBOL PROGRAM TO BE FLOWCHARTED, WHICH MAY BE ON ANY INPUT DEVICE (DISK, DRUM, CARD READER, MAG TAPE, PAPER TAPE, ETC.). ALSO, PROGRAMS TO FLOWCHARTED MAY BE BATCHED. OUTPUT FROM FLOBOL CONSISTS OF THREE PRINTED DESTINED FILES: 1) A SOURCE LISTING OF EACH OF THE PROGRAMS TO BE FLOW- CHARTED WITH REFERENCE NUMBERS ASSIGNED BY THE FIRST PROGRAM IN THE FLOBAL SYSTEM; 2) A CROSS-REFERENCE LISTING, IF SELECTED, PRODUCED BY THE SECOND FLOBOL PROGRAM, CONTAINING ALL DATA NAMES AND PROCEDURE NAMES IN ALPHABETICAL
DOCUMENTATION: MAINTENANCE MANUAL, PROGRAM DESCRIPTION, USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: COSMIC, UNIVERSITY OF GEORGIA
CONTACT: REX WALKER, COSMIC, UNIVERSITY OF GEORGIA, SUITE 112, BARROW HALL, ATHENS, GEORGIA, 30602, USA, 404-542-3265
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FLODIA, TITLE: FLODIA
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE

FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN IV, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: FLODIA IS A GENERAL PURPOSE FUNCTIONAL FLOWCHARTING PROGRAM WHICH AUTOMATICALLY GENERATES FLOW DIAGRAMS ACCORDING TO USER SPECIFICATIONS. THE CHARTS ARE PRODUCED BY EITHER THE 12 OR 30 INCH CALCOMP PLOTTERS WITH PAGE NUMBERS OPTIONALLY INSERTED. THE USER IS OFFERED A VARIETY OF BASIC FEATURES WHOSE PLACEMENT AND CONNECTION HE SPECIFIES BY INPUT. ADDITIONAL FIGURES MAY BE DEFINED BY THE USER THROUGH INPUT SPECIFICATION. SUPPLIED TEXT MAY BE ENCLOSED BY A FIGURE OR POSITIONED ELSEWHERE ON THE DIAGRAM. AN EDITING FEATURE IS AVAILABLE WHICH ALLOWS FOR AUTOMATIC INSERTION OR DELETION OF CHART SEGMENTS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SIMULATION SOFTWARE DEPT.
CONTACT: J. D. OLIVER, TRW SIMULATION SOFTWARE DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0923
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FLOWGEN, TITLE: FLOWGEN
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: FLOWGEN GENERATES PROGRAM FLOWCHARTS AUTOMATICALLY FROM FORTRAN SOURCE CARDS. COMMENTS WHICH OCCUR ON THE SOURCE CODE ARE TRANSFERRED TO THE FLOWCHART IN AN INTELLIGENT MANNER. THE FLOWCHARTS PRODUCED ARE DIVIDED INTO PAGES WHICH CAN BE PHOTOREDUCED AND PRINTED ON 8-1/2 X 11 INCH PAPER CONNECTOR, CONTINUATION REMARKS, AND PAGE NUMBERS ARE AUTOMATICALLY INSERTED.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: CALIFORNIA COMPUTER PRODUCTS, INC.
CONTACT: CALIFORNIA COMPUTER PRODUCTS, INC., 2411 W. LA PALMA, ANAHEIM, CA, USA, 714-821-2011
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FOCUS, TITLE: FOCUS

CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, DATA INPUT, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, USER OUTPUT, DIAGNOSTICS, GRAPHICS, TABLES, STATIC ANALYSIS, MANAGEMENT, DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, SVS, VM/CMS, TSO, OS/VS, OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSED IN-HOUSE USE, INFORMATION BUILDERS; USAGE BASIS, TYMSHARE
TOOL SUMMARY: FOCUS IS AN INTERACTIVE INFORMATIONAL CONTROL SYSTEM THAT CONTAINS FACILITIES FOR DESCRIBING FILES, FOR ENTERING, CHANGING AND DELETING RECORDS IN FILES, AND FOR REPORTING, GRAPHING, MODELLING AND STATISTICALLY ANALYZING DATA FROM FILE INFORMATION. FOCUS CONTAINS MANY DBMS TYPE FACILITIES AND CAN ACCESS DATA FROM IBM'S IMS AND CULLINANE'S IDMS DATABASES AS WELL AS FROM FOCUS CREATED FILES. FEATURES INCLUDE: HIERARCHICAL AND RELATIONAL FILE STRUCTURES, INTERACTIVE ENGLISH LANGUAGE REPORT WRITER, GRAPHING, STATISTICS, FILE MAINTENANCE, 3270 FULL SCREEN FORMATTED DATA ENTRY, FINANCIAL MODELLING, INTERFACES TO IMS, IDMS, VSAM AND ISAM FILES.
DOCUMENTATION: USER'S MANUAL (500), PRIMER
REFERENCES: [COMP79], COMPUTER DECISIONS MAGAZINE, "BANK CUSTOMER QUERIES PUT INTO FOCUS", COMPUTER DECISIONS, 790500
[COMP79A], COMPUTERWORLD, "FOCUS AIDS VM FILE USE", COMPUTERWORLD, 790716
DEVELOPER: INFORMATION BUILDERS
CONTACT: INFORMATION BUILDERS, INC., 254 W. 31ST STREET, NEW YORK, NY, 10001, USA, 212-736-4433
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: FORAN, TITLE: FORTRAN ANALYZER PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, INTERFACE ANALYSIS, CROSS REFERENCE, CONSISTENCY CHECKING, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: U.S. ARMY ADVANCED RESEARCH CENTER
TOOL SUMMARY: FORAN PERFORMS STATIC ANALYSIS ON SOURCE CODE WRITTEN IN ANY DIALECT OF FORTRAN. USAGE OF PROGRAM LABELS, TAGS, DATA VARIABLES, CONSTANTS, SUBROUTINES, AND OTHER PROGRAM ELEMENTS ARE ANALYZED FOR A MAIN PROGRAM AND ITS RELATED SUBROUTINE COMPONENTS. EACH ITEM NAME IS LISTED, SHOWING THE STATEMENT NUMBERS WHERE THE ITEM IS REFERENCED AND HOW IT IS REFERENCED (ASSIGNED, USED, INPUT, OUTPUT, SUBROUTINE CALL, ETC.). FORAN ALSO IDENTIFIES SYMBOLS DEFINED BUT NOT USED, DISCREPANCIES IN VARIABLE TYPE AND DIMENSION, AND NUMBER AND TYPE OF PARAMETERS IN FUNCTIONS AND SUBROUTINES. SYNTAX ERRORS ARE FLAGGED DURING THE ANALYSIS FORAN'S PRIMARY USE IS TO DETERMINE POSSIBLE COMPUTATION OF LOGIC ERRORS FROM THE STATIC ANALYSIS OF DATA USAGE. IT IS ALSO VALUABLE IN ANALYZING THE EFFECT OF A PROGRAM MODIFICATION ON DATA USAGE.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[FINF79], M. FINFER, "SOFTWARE DEBUGGING METHODOLOGY", FINAL TECHNICAL REPORT, RADC-TR-79-57, THREE VOL., 790400
DEVELOPER: U.S. ARMY ADVANCED RESEARCH CENTER, HUNTSVILLE, ALABAMA
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: FORMAN, TITLE: FORMAN
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: FORMAN IS USED TO DEFINE AND MAINTAIN SUBROUTINE COMMON DATA STRUCTURES DURING THE DEVELOPMENT AND MAINTENANCE PHASES OF LARGE FORTRAN PROGRAMS. WHEN DEFINING THE COMMON DATA BASE, THE USER INPUTS CARDS WHICH IDENTIFY THE NAME OF EACH VARIABLE, ITS DIMENSION, TYPE AND DESCRIPTION. FORMAN CONSTRUCTS A DICTIONARY CONTAINING THIS DATA AND PRODUCES PRINTED OUTPUT DOCUMENTING EACH COMMON BLOCK IN THE PROGRAM. A SECOND OPTION OF THE FORMAN SYSTEM ACCEPTS AS INPUT THE NUMBER OF EACH COMMON VARIABLE UTILIZED BY A PARTICULAR ROUTINE. FORMAN OUTPUTS ALL OF THE CARD IMAGES REQUIRED EFFECT THE LINKAGE TO COMMON THAT FORTRAN REQUIRES. THESE CARDS ARE NORMALLY INSERTED BY HAND INTO THE FORTRAN SOURCE DECK. THE GENERAL USE COMMON DATA BASE MANAGEMENT SOFTWARE CAN GREATLY REDUCE THE MAN HOURS REQUIRED TO UPDATE PROGRAMS AS WELL AS TO DEBUG COMMON PROBLEMS THAT MAY EXIST.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: A. J. DESALVIO, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3083
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FORREF, TITLE: FORTRAN CROSS-REFERENCE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, SLEUTH
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: FORREF PROVIDES THE FORTRAN USER WITH DETAILED CROSS-REFERENCE TABLES OF SELECTED FORTRAN SYMBOLIC ELEMENTS. THE THREE PRINCIPAL TYPES OF PRINTED OUTPUT ARE: A VARIABLE CROSS-REFERENCE TABLE OF ALL PROGRAM VARIABLES V PROGRAM LINE NUMBERS, INCLUDING THE NATURE OF THE CROSS-REFERENCE (E.G. USED, CALLED); A TRANSFER CROSS-REFERENCE LISTING ALL TRANSFER POINTS WITH THE SYMBOLIC ELEMENT; AND A STATEMENT NUMBER CROSS-REFERENCE TABLE INDICATE ALL PROGRAM LINE NUMBERS ON WHICH EACH STATEMENT NUMBER IS REFERENCED.
DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SYS ENG AND ANAL DEP
CONTACT: J. PARNELL, TRW SYS ENG AND ANAL DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1116
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FORTRAN OPTIMIZ, TITLE: FORTRAN OPTIMIZATION INSTRUMENTERS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THESE ARE TWO TOOLS THAT AUTOMATICALLY GENERATE MODULE AND STATEMENT LEVEL EXECUTION-TIME PROFILES (I.E., REPORTS) OF PROGRAMS. THE PROFILES QUANTIFY OPTIMIZATION EFFORTS IN DETAIL. THEY SHOW ABSOLUTE AND RELATIVE EXECUTION TIMES FOR SUBSYSTEMS, MODULES AND STATEMENTS AS WELL AS FREQUENCY COUNTS AND OPTIMIZATION INDICES. THE FIRST TOOL OPERATES AT THE ROUTINE LEVEL. THE SECOND TOOL OPERATES AT THE STATEMENT LEVEL. THESE TOOLS REQUIRE NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. THEY SIMPLY ACCEPT AS INPUT SOURCE PROGRAMS AND TEST DATA, AND OUTPUT CLEAR PROFILES. THESE TOOLS PERMIT TOP-DOWN OPTIMIZATION IN A NATURAL MANNER.

THEY POSSESS A STRONG MANAGEMENT ORIENTATION AND CAN HAVE MUCH IMPACT IN PROPERLY FOCUSING OPTIMIZATION EFFORTS. THEY SERVE AS AN EXCELLENT QUALITY ASSURANCE FACILITY WHICH ALLOWS MANAGEMENT TO SET, FACILITATE, AND ENFORCE OPTIMIZATION STANDARDS.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: FORTRAN TESTING, TITLE: FORTRAN TESTING INSTRUMENTERS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THESE ARE TWO TOOLS THAT AUTOMATICALLY GENERATE MODULE AND STATEMENT LEVEL EXECUTION-TIME PROFILES (I.E., REPORTS) OF PROGRAMS. THE PROFILES QUANTIFY TEST COVERAGE AND TEST EFFECTIVENESS IN DETAIL. THE FIRST TOOL OPERATES AT THE ROUTINE LEVEL. THE SECOND TOOL OPERATES AT THE STATEMENT LEVEL. THESE TOOLS REQUIRE NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. THEY SIMPLY ACCEPT AS INPUT SOURCE PROGRAMS AND TEST DATA, AND OUTPUT CLEAR PROFILES. THEY PERMIT TOP-DOWN TESTING IN A NATURAL MANNER. THESE PRODUCTS POSSESS A STRONG MANAGEMENT ORIENTATION AND CAN HAVE MUCH IMPACT ON MINIMIZING THE COST OF TESTING. THEY SERVE AS AN EXCELLENT QUALITY ASSURANCE FACILITY WHICH ALLOW MANAGEMENT TO SET, FACILITATE AND ENFORCE TESTING STANDARDS. THE TESTING INSTRUMENTERS ARE MEMBERS OF SOFTOOL 80, AN INTEGRATED SET OF TOOLS MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: USER MANUAL, TECHNICAL REPORTS
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: FORTRAN TRACING, TITLE: FORTRAN TRACING INSTRUMENTERS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TRACING, PATH FLOW TRACING,

FORTRAN TRACING

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THESE ARE TWO TOOLS THAT AUTOMATICALLY DOCUMENT THE PATH OF PROGRAM CONTROL FLOW FROM MODULE (STATEMENT) TO MODULE (STATEMENT). THE FIRST TOOL OPERATES AT THE ROUTINE LEVEL, THE SECOND TOOL OPERATES AT THE STATEMENT LEVEL. THESE PRODUCTS OFFER THE SOFTWARE PROFESSIONAL A FLEXIBLE, CONSISTENT AND EASY TO USE TRACING FACILITY. THESE TOOLS REQUIRE NO MODIFICATION OF ANY COMPILER OR APPLICATION PROGRAM. THEY SIMPLY ACCEPT AS INPUT SOURCE PROGRAMS AND TEST DATA, AND OUTPUT CLEAR TRACE DOCUMENTATION (I.E., PROFILES) WHICH IS FORMATTED AND INDENTED TO FACILITATE UNDERSTANDING. THEY PERMIT TOP-DOWN TRACING IN A NATURAL MANNER. THE TRACING INSTRUMENTERS ARE MEMBERS OF SOFTOOL 80, AN INTEGRATED SET OF TOOLS MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: FORTREF, TITLE: FORTRAN SYMBOLIC NAME CROSS-REFERENCE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN IV, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00, UNIVAC 11XX, HONEYWELL 6XXX, HONEYWELL 6XX
TOOL SUMMARY: FORTREF PRODUCES FROM FORTRAN SOURCE PROGRAMS A COMPREHENSIVE SYMBOLIC NAME CROSS-REFERENCE DICTIONARY TO ASSIST ANALYSTS AND PROGRAMMERS IN DEBUGGING, CHANGING AND CONVERTING THEIR FORTRAN PROGRAMS. IT IS ORGANIZED ALPHABETICALLY BY SYMBOLIC NAME AND SHOWS THE ACTUAL FORTRAN STATEMENT IN WHICH THE SYMBOLIC NAME APPEARS ALONG WITH THE ASSOCIATED PROGRAM NAME. THE DICTIONARY ALSO INCLUDES SUCH SELECTED FORTRAN STATEMENT NAMES AS READ, WRITE, FORMAT, CALL, ENTRY, STOP, AND RETURN.
DOCUMENTATION: USER'S MANUAL, PROGRAM MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
CONTACT: WILLIAM F. DEHAAN, B. O. BOX 101, ROCKAWAY, NJ, 07866, USA, 201-627-6453

FORTREF

INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: FOSTRA, TITLE: FORTRAN STRUCTURING AID
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, RESTRUCTURING, MACHINE OUTPUT, SOURCE CODE OUTPUT, SFTRAN, USER OUTPUT, GRAPHICS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, STRUCTURED FORTRAN
TOOL SIZE: CORE: 55K
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): RSX-11
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: FOSTRA IS A GRAPHICALLY INTERACTIVE SYSTEM (USING ELECTRONIC PENCIL) THAT IS COGNIZANT OF STRUCTURED CODE AND BLOCK STRUCTURING AND IS USED TO FACILITATE CONVERSION OF FORTRAN TO SFTRAN. SFTRAN IS A STRUCTURED FORTRAN PREPROCESSOR USED AT JPL.
DOCUMENTATION: TECHNICAL PAPER
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: FTN-77 ANALYZER, TITLE: A FORTRAN-77 ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 77, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN 77, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, ASSERTION CHECKING, RUN-TIME VERIFICATION, TUNING, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 810500
IMPLEMENTATION LANGUAGE: FORTRAN 77
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE THROUGH FEDERAL SOFTWARE EXCHANGE CENTER, FSWEC-(NOT ASSIGNED)
TOOL SUPPORTED: NO
TOOL SUMMARY: THE NBS FORTRAN-77 ANALYZER CONSISTS OF TWO PARTS: STATIC ANALYSIS AND DYNAMIC ANALYSIS. STATIC ANALYSIS COLLECTS FROM INDIVIDUAL PROGRAMS FREQUENCY STATISTICS ON FORTRAN STATEMENT TYPES. SUCH ACCUMULATIONS ARE USEFUL FOR LANGUAGE STUDIES, INPUT TO STANDARDS COMMITTEES, SYSTEM BENCHMARK CHARACTERIZATION, AND STUDIES IN SOFTWARE PORTABILITY AND CONVERSION. DYNAMIC ANALYSIS COLLECTS EXECUTION FREQUENCIES OF CODE SEGMENTS (A CODE SEGMENT IS A NON-EMPTY SEQUENCE OF STATEMENTS WITH A UNIQUE ENTRY AND A SOLE EXIT), INFORMATION ON THE CORRECTNESS OF USER- IMBEDDED ASSERTIONS, AND TRACE DATA. THIS DATA IS USEFUL IN TESTING, DEBUGGING, AND OPTIMIZING PROGRAMS.

DOCUMENTATION: USER'S MANUAL (95 PAGES), MAINTENANCE MANUAL (313 PAGES), TEST PLAN (91 PAGES), DESIGN SPECIFICATION (95 PAGES), SOFTWARE SUMMARY (1 PAGE), FUNCTIONAL REQUIREMENTS DOCUMENT (46 PAGES)
REFERENCES: [LYON74], LYON AND STILLMAN, "A FORTRAN ANALYZER", NBS TECHNICAL NOTE 849, 741000
[LYON73], LYON, "STATIC LANGUAGE ANALYSIS", NBS TECHNICAL NOTE 797, 731000
DEVELOPER: TRW DEFENSE AND SPACE SYSTEMS GROUP, ONE SPACE PARK, REDONDO BEACH, CA
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, USA, 703-756-2610
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS, TOOL FAIR

ACRONYM: FTN ANALYZER, TITLE: A FORTRAN ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 741000
IMPLEMENTATION LANGUAGE: FORTRAN 66
TOOL PORTABLE: YES, TOOL SIZE: 5665 STATEMENTS (60% COMMENTS)
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE THROUGH FEDERAL SOFTWARE EXCHANGE CENTER, FSWEC-77/0264
TOOL SUPPORTED: NO
TOOL SUMMARY: THE ANALYZER CONSISTS OF TWO PARTS: STATIC ANALYSIS AND DYNAMIC ANALYSIS. STATIC ANALYSIS COLLECTS FROM INDIVIDUAL PROGRAMS 118 FREQUENCY STATISTICS ON FORTRAN STATEMENT TYPES AND CAN ACCUMULATE THESE STATISTICS OVER ALL PROGRAMS ANALYZED. SUCH ACCUMULATIONS ARE USEFUL FOR LANGUAGE STUDIES, INPUT TO STANDARDS COMMITTEES, SYSTEM BENCHMARK CHARACTERIZATION, AND STUDIES IN SOFTWARE PORTABILITY AND CONVERSION. DYNAMIC ANALYSIS COLLECTS EXECUTION FREQUENCIES OF CODE SEGMENTS (A CODE SEGMENT IS A NON-EMPTY SEQUENCE OF STATEMENTS WITH A UNIQUE ENTRY AND A SOLE EXIT). EXECUTION FREQUENCIES ARE USEFUL FOR OPTIMIZATION AND TESTING OF PROGRAMS.
DOCUMENTATION: TECHNICAL DESCRIPTION (23)
REFERENCES: [LYON74], LYON AND STILLMAN, "A FORTRAN ANALYZER", NBS TECHNICAL NOTE 849, 741000
[STIL75], STILLMAN AND LEONG-HONG, "SOFTWARE TESTING FOR NETWORK SERVICES", NBS TECHNICAL NOTE 874, 750700
[LYON75], LYON AND STILLMAN, "SIMPLE TRANSFORMS FOR INSTRUMENTING FORTRAN DECKS", SOFTWARE-PRACTICE AND EXPERIENCE, 750000
[LYON73], LYON, "STATIC LANGUAGE ANALYSIS", NBS TECHNICAL NOTE 797, 731000

[FSEC80], GENERAL SERVICES ADMINISTRATION/NATIONAL TECHNICAL INFORMATION SERVICE, "FEDERAL SOFTWARE EXCHANGE CATALOG", GSA/ADTS/C-80/1, PB80-904001, 800100
DEVELOPER: NATIONAL BUREAU OF STANDARDS (ICST), WASHINGTON, DC 20234
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, USA, 703-756-2610
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS, FEDERAL SOFT EXCHANGE CATALOG

ACRONYM: FTNCODER, TITLE: FTNCODER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, FORTRAN, FORTRAN 66, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, CDC FORTRAN, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES
TOOL SUMMARY: FTNCODER PRODUCES ONE OR MORE 'STANDARD' CDC FORTRAN (FTN) PROGRAM MODULE FROM AN INPUT FILE OF LINES CONSISTING OF: MODULE NAME, AND A SHORT COMMENT DESCRIBING THE MODULE'S PURPOSE. EACH OF THE MODULES PRODUCED INCLUDES SUITABLY MARKED COMMENTS FOR THE HEADER (INCLUDING THE PURPOSE) MODULE AUTHOR, DATE, AND TIME; AND A PLACE TO INSERT NOTES RELATIVE TO THE MODULE. CONTROL DATA CORPORATION 'UPDATE' (REF. A) CONDITIONAL SOURCE CODE BLOCKS ARE WRITTEN AT THE ENTRY AND EXIT OF EACH MODULE TO MARK THE NAME AND TIME OF ENTRY, AND THE TOTAL ELAPSED TIME IN THE MODULE. THESE BLOCKS ARE LOGICALLY DELETABLE WHEN THE PROGRAM UNDER DEVELOPMENT REACHES THE PRODUCTION STAGE; HOWEVER, THEY REMAIN IN THE SOURCE CODE LIBRARY. UNIQUENESS OF TEXT MARKS PRODUCED BY 'FTNCODER' ALLOWS EASY LOCATION OF A SPECIFIC PORTION OF THE MODULES WITH A LINE ORIENTED TEXT EDITOR. SUFFICIENT 'WHITE SPACE' IS INCLUDED IN EACH MODULE TO ENHANCE READABILITY OF THE SOURCE CODE.
DEVELOPER: NSRDC
CONTACT: PETER N. ROTH, NSRDC, STRUCTURES DEPARTMENT, BETHESDA, MD, 20084, USA, 202-227-1851
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: FTNXREF, TITLE: FORTRAN INTER-SOURCE CROSS-REFERENCE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, CDC EXTENDED FORTRAN, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, CHANGE CONTROL, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL 6000

TOOL SIZE: 1200 STATEMENTS
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): NOS (CDC SORT/MERGE UTILITY PACKAGE)
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PROPRIETARY PROPERTY OF BATTELLE LABS, PRICE INQUIRIES WELCOME
TOOL SUMMARY: THE FORTRAN INTER-SOURCE CROSS-REFERENCE PROGRAM CONSISTS OF TWO PARTS: (1) A LEXICAL ANALYZER TO EXTRACT VARIABLE NAMES FROM THE SOURCE CODE, AND (2) A POST-SORT CROSS-REFERENCE LISTING PROGRAM. THIS TOOL IS EXTREMELY USEFUL FOR ANY HEAVILY COMMON-COUPLED FORTRAN SYSTEM. THE CROSS-REFERENCE OUTPUT IS SORTED BY SUBROUTINE/PROGRAM/FUNCTION NAME WITHIN VARIABLE NAME. EACH ENTRY IS ACCOMPANIED BY THE CARD IMAGE THAT THE VARIABLE APPEARED ON, THEREBY PERMITTING THE USER TO SEE HOW THAT VARIABLE WAS USED IN THAT PARTICULAR STATEMENT.
DOCUMENTATION: USER INSTRUCTIONS
DEVELOPER: BATTELLE COLUMBUS LABS, CARNEGIE-MELLON UNIVERSITY
CONTACT: CARY SCOFIELD, BATTELLE COLUMBUS LABS, 505 KING AVE, COLUMBUS, OH, 43201, USA, 614-424-5049
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: GADTR AID, TITLE: GRAPHICAL TREE STRUCTURE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, DESIGN CHARTS, HIERARCHICAL TREES, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY OUTSIDE BOEING MAY BE RESTRICTED
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY
TOOL SUMMARY: GADTR AID (GRAPHICAL DESIGN TREE AID) IS A PROGRAM WHICH PLOTS TREE STRUCTURES ON A VARIETY OF OUTPUT DEVICES. GADTR AID CAN BE USED TO GRAPHICALLY PORTRAY A VARIETY OF TREE STRUCTURES, INCLUDING: (1) PROGRAM CALL TREES; (2) ORGANIZATION CHARTS; (3) SYSTEM DECOMPOSITION TREES.
DOCUMENTATION: USERS MANUAL
REFERENCES: [BCSC79], BOEING COMPUTER SERVICES COMPANY, "AUTOMATED SOFTWARE TOOLS CATALOG", BCS 10236, 790800
DEVELOPER: BOEING COMPUTER SERVICES COMPANY
CONTACT: GARY KAMPEN, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346, SEATTLE, WA, 98124, USA, 206-575-5393
INFORMATION SOURCE: BCS SOFTWARE TOOLS CATALOG

ACRONYM: GENTESTS, TITLE: GENTESTS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, MACHINE OUTPUT, SOURCE CODE OUTPUT, STATIC ANALYSIS, I/O SPECIFICATION ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED

IMPLEMENTATION LANGUAGE: PASCAL
COMPUTER (OTHER HARDWARE): IBM 360/370, CII-HB
OS (OTHER SOFTWARE): OS/MVS, GCOS, MULTICS
TOOL SUMMARY: THIS TOOL IS A PROGRAMMED TEST CASE GENERATOR FOR TESTING PROGRAM MODULES AND PARALLEL PROGRAMS. IT HAS THREE MAIN FUNCTIONS: (1) GENERATION OF ALL POSSIBLE CONFIGURATIONS OF THE CALLING PARAMETERS FOR EACH FUNCTION OF THE MODULE BEING TESTED. (2) INTERPRETATION OF TEST CASES WRITTEN IN A SYMBOLIC "COMMAND LANGUAGE" FOR TESTING THE CONNECTION OF FUNCTIONS. (3) EDITING OF TEST RESULTS AND THE MODULE'S OWN DATA.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ANDR80], J. ANDRE, J. DUCLOY, P. LAFORGUE, H. MASSIE, AND J. C. RAULT, "CATALOGUE 1980 DE PROTOTYPES DE RECHERCHE EN LOGICIEL", ADI (AGENCE DE L'INFORMATIQUE), CNRS, FRANCE, 801100
DEVELOPER: LABORATOIRE IMAG
CONTACT: A. TARABOUT, LABORATOIRE IMAG, BP 53 X, GRENOBLE, CEDEX, 38041, FRANCE,
V. BASILI, LABORATOIRE IMAG, BP 53 X, GRENOBLE, CEDEX, 38041, FRANCE,
P. GOTLIB, LABORATOIRE IMAG, BP 53 X, GRENOBLE, CEDEX, 38041, FRANCE,
INFORMATION SOURCE: ADI/CNRS CATALOGUE 1980

ACRONYM: GENTEXTS, TITLE: GENTEXTS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, SIMULA, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 740000
IMPLEMENTATION LANGUAGE: PASCAL, PL/1, SIMULA 67
COMPUTER (OTHER HARDWARE): CII-HB
OS (OTHER SOFTWARE): SIRIS
TOOL SUMMARY: PREPARING TESTS FOR A COMPILER ENTAILS WRITING A LARGE NUMBER OF TEST PROGRAMS OF A RELATIVELY FIXED STRUCTURE. SUCH A TEST PROGRAM CAN BE DESCRIBED BY A PARTICULAR TYPE OF GRAMMAR, WHICH IS LEARNED FAIRLY QUICKLY. THESE GRAMMARS, CALLED "COMMAND GRAMMARS", ARE SUBMITTED TO THE GENERATOR, WHICH DERIVES THE CORRESPONDING TEST PROGRAM. THE GENERATOR AUTOMATICALLY TRANSFORMS THE COMMAND GRAMMAR INTO A TEST GENERATOR PROGRAM. THIS PROGRAM (IN SIMULA 67) IS THEN COMPILED AND EXECUTED, AND PRODUCES THE TEST CASES DESCRIBED BY THE GRAMMAR. THIS OUTPUT CAN THEN BE USED (AFTER POSSIBLE MODIFICATIONS) TO TEST THE TARGET COMPILER.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER
REFERENCES: [ANDR80], J. ANDRE, J. DUCLOY, P. LAFORGUE, H. MASSIE, AND J. C. RAULT, "CATALOGUE 1980 DE PROTOTYPES DE RECHERCHE EN LOGICIEL", ADI (AGENCE DE L'INFORMATIQUE), CNRS, FRANCE, 801100
DEVELOPER: IRISA

CONTACT: B. HOUSSAIS, IRISA, CAMPUS DE BEALIEU, UNIVERSITE DE RENNES I, RENNES, CEDEX, 35042, FRANCE, (99) 36.48.15
INFORMATION SOURCE: ADI/CNRS CATALOGUE 1980

ACRONYM: GIM/GIM II, TITLE: GENERALIZED INFORMATION MANAGEMENT SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, TABLES, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PWS, OBJECT
COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX
TOOL SUMMARY: GIM IS AN ON-LINE GENERALIZED DATA MANAGEMENT SYSTEM. THE PRINCIPAL GIM FEATURES WHICH MAKE IT A VALUABLE TOOL FOR APPLICATIONS-LIKE CONFIGURATION MANAGEMENT ARE: NO PROGRAMMING IS REQUIRED FOR APPLICATION; FILES CAN BE CONSTRUCTED, LOADED WITH DATA, UPDATED, OR ACCESSED FROM A TERMINAL OR IN BATCH MODE; IT IS USER ORIENTED AND IT CAN BE QUERIED WITH AN ENGLISH-LIKE USER LANGUAGE, IT CAN RETRIEVE SELECTED DATA AND IT CAN GENERATE REPORTS AT THE TERMINAL. GIM IS BEING USED FOR CONFIGURATION MANAGEMENT ON THE SITE DEFENSE PROJECT AND FOR ALL SOFTWARE CONFIGURATION MANAGEMENT AT THE SUNNYVALE LABORATORY OF TRW. THIS ON-LINE OR BATCH MODE SYSTEM HAS BEEN USED EXTENSIVELY BY TRW TO MAINTAIN AND REPORT PROJECT AND CONFIGURATION MANAGEMENT RECORDS.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, IPO
CONTACT: GARY WIRES, TRW, IPO, ONE SPACE PARK, REDONDO BEACH, CA, 90728, USA, 213-535-2380
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: GIRAFF, TITLE: GLOBAL INDEX AND ROUTINE ANALYZER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): TSS, CDC 6X00/7X00, XDS SIGMA X
TOOL SUMMARY: GIRAFF AUTOMATICALLY PROVIDES A GLOBAL INDEX FOR EVERY SYMBOLIC NAME (EXCEPT LITERALS) DEFINED IN YOUR PROGRAM AND INDICATES WHETHER, OR HOW AND WHERE, IT IS REFERENCED IN A SUBROUTINE, MAIN PROGRAM, OR FUNCTION. A TOOL FOR THE ANALYSIS OF FORTRAN PROGRAMS OF INTERMEDIATE OR LARGE SIZE, GIRAFF ALLOWS FOR BOTH AN OVERVIEW AND AN IN-DEPTH SUBROUTINE OR FUNCTION) BY SUBROUTINE ANALYSIS OF SYMBOLIC OR STATEMENT NUMBER REFERENCE. PROVIDING FOR 24

CATEGORIES OF SYMBOLIC REFERENCING, THE ROUTINE ANALYZER FEATURE ALLOWS THE USER TO IMMEDIATELY IDENTIFY NOT ONLY WHERE A PARTICULAR SYMBOL IS REFERENCED IN A SUBROUTINE BUT THE NATURE OF THE REFERENCE, BE IT IN AN ARITHMETIC STATEMENT, DO LOOP, SUBROUTINE ARGUMENT, ETC. THE GLOBAL INDEXING FEATURE PROVIDES AN INDEX OF VARIABLE (INCLUDING SUBROUTINE AND FUNCTION) REFERENCES BY SUBROUTINE AND FUNCTION THROUGHOUT THE PROGRAM. IT FURTHER IDENTIFIES VARIABLES REFERENCED ONLY IN COMMON BLOCK DEFINITIONS AND THOSE REFERENCED IN EXECUTABLE CODE.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SIMULATION SOFTWARE DEPT
CONTACT: DAVID RICHMOND, TRW, SIMULATION SOFTWARE DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-4190
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: GOTO-ANALYZER, TITLE: GOTO-ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 77, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, COMPLEXITY MEASUREMENT, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800000
IMPLEMENTATION LANGUAGE: FORTRAN 77
TOOL PORTABLE: YES
TOOL SUMMARY: THE GOTO-ANALYZER IS A STATIC ANALYZER WHICH COUNTS ALL OCCURRENCES OF THE GOTO STATEMENT IN A COMPLETE FORTRAN PROGRAM AND DIVIDES THEM OVER THE FOLLOWING CATEGORIES: (1) JUMP FORWARD, BACKWARD, OR TO THE END OF THE MODULE, (2) JUMPS DEPENDING ON A LOGICAL IF, AND (3) "KNOTS", IE, TWO JUMPS CROSSING EACH OTHER'S PATH. EACH CATEGORY HAS A CERTAIN WEIGHT. FOR INSTANCE, "KNOTS" ARE PENALIZED MORE HEAVILY THAN JUMPS TO THE END OF A MODULE. THE NUMBER OF EXECUTABLE STATEMENTS IS ALSO ESTABLISHED. IN THIS WAY, IT IS POSSIBLE TO ARRIVE AT A QUALIFICATION OF THE FORTRAN PROGRAM UNDER CONSIDERATION. THE OUTPUT OF THE GOTO-ANALYZER CONSISTS OF THE NUMBER OF GOTO'S IN EACH CATEGORY, THE NUMBER OF EXECUTABLE STATEMENTS, AND A RATING, RANGING FROM "GOOD" TO "VERY BAD".
REFERENCES: [KRAN80], A. KRANENDONK, "FORTRAN GOTO-ANALYZER DESCRIBED", TESTING TECHNIQUES NEWSLETTER, 800200
INFORMATION SOURCE: TESTING TECHNIQUES NEWSLETTER

ACRONYM: GRAFMAKER, TITLE: GRAFMAKER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, FORMATTING, USER OUTPUT, GRAPHICS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 810200
IMPLEMENTATION LANGUAGE: FORTRAN 66
TOOL PORTABLE: YES, TOOL SIZE: 35,000 SOURCE STATEMENTS

TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE REQUIRED
TOOL SUPPORTED: YES, TOOL SUPPORT: PRECISION VISUALS, INC.
TOOL SUMMARY: GRAFMAKER IS AN INTEGRATED SYSTEM OF GRAPHICS SOFTWARE TOOLS FOR DESIGNING AND VIEWING LINE GRAPHS, BAR GRAPHS AND PIE CHARTS. BECAUSE GRAFMAKER IS BUILT ON TOP OF DI-3000, IT IS BOTH DEVICE INDEPENDENT AND MACHINE INDEPENDENT. GRAFMAKER HAS BEEN DEVELOPED FOR USE BY FORTRAN APPLICATION PROGRAMMERS. A CHART OR GRAPH IS DEVELOPED AS A MODEL USING A COMBINATION OF "GENERIC" CAPABILITIES COMMON TO MOST DATA DISPLAY APPLICATIONS (E.G., ANNOTATION, LEGENDS, TICK MARKS, AXES AND PIE CHART SEGMENTS). FEATURES INCLUDE EXPLOSION OF PIE CHART SEGMENTS, METAFILE OUTPUT, BACKGROUND COLOR SELECTION, MULTIPLE AXES, ARBITRARY AXIS POSITIONING, FILLING BETWEEN TWO CURVES ON A LINE GRAPH, BACKGROUND GRIDS, LOG AND NATURAL LOG SCALING OPTIONS AND MULTIPLE CHARTS OR GRAPHS ON A SINGLE PICTURE.
DOCUMENTATION: USER'S GUIDE (123 PAGES)
DEVELOPER: PRECISION VISUALS, INC.
CONTACT: PRECISION VISUALS, INC., 250 ARAPAHOE AVE., BOULDER, CO, 80302, USA, 303-449-0806
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: HARDWARE SIMULA, TITLE: HARDWARE SIMULATOR
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, CODE INPUT, BASIC, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, SIMULATION, RESOURCE UTILIZATION, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800100
IMPLEMENTATION LANGUAGE: BASIC
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): RSTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THIS MODULE IS APPENDED TO THE MAIN PROGRAM OF THE USER WHICH CONSISTS OF A SET OF BASIC INSTRUCTIONS AND FUNCTION CALLS FOR SPECIAL OPERATIONS. THERE IS A CONFIGURATION PROCEDURE TO DEFINE A SET OF DEVICE AND MEMORY FILES SO THAT A RANGE OF DEVICES CAN BE SUPPORTED. ANOTHER PART OF THE CONFIGURATION CONSISTS OF SETTING THE TIMING AND PRIORITY VALUES OF THE SPECIAL OPERATIONS AND INTERRUPTS.
DOCUMENTATION: TECHNICAL PAPER (10), USER MANUAL (5)
REFERENCES: [PAYN80A], A. J. PAYNE, "BASIC CAN BE A USEFUL SIMULATION LANGUAGE", US SUMMER SIMULATION CONFERENCES, 800000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: HARP, TITLE: HIGH-POWERED ACCOUNTING RESOURCES PROGRAM

CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, DESIGN CHARTS, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SUMMARY: HARP CREATES CHARTS FOR THE GRAPHIC DISPLAY OF PROJECT SCHEDULE AND RESOURCE INFORMATION. THE SYSTEM HAS BEEN DESIGNED TO PRESENT TEXTUAL, NUMERIC, AND SCHEDULE DATA IN A FORMAT WHICH IS TAILORED TO FIT THE REQUIREMENTS OF A PARTICULAR APPLICATION OR PROJECT. THE HARP SYSTEM PROVIDES PROJECT MANAGEMENT AND COST CAPABILITIES WHICH ARE VALUABLE OVER THE ENTIRE LIFE CYCLE A PROJECT; INCLUDING PROPOSAL PRESENTATIONS, CONCEPT DESIGN, DATA VISUALIZATION, PROJECT SCHEDULE AND COST CONTROL, AND ENHANCEMENT OF DELIVERABLE PRODUCTS. SEPARATION OF CHART DESIGN AND CHART DATA WITHIN THE SYSTEM ENABLES NEW AND SPECIAL CHARTS TO BE CREATED WITH NO MODIFICATION OF THE DATA BASE CHARTS ARE ALL RECTANGULAR IN SHAPE, AND DIMENSIONS ARE EXPANDED AUTOMATICALLY TO ACCOMMODATE ALL ENTERED DATA. THE POSITION AND NUMBER OF VERTICAL COLUMNS IS DETERMINED BY THE USER ONCE IN AN INITIAL DESIGN OF A CHART. DATA IS SEQUENTALLY ENTERED INTO THIS FORMAT, AND CHARTS MAY BE PRODUCED WHENEVER UPDATES OCCUR WITHOUT MANIPULATING THE CHART FORMAT.
DOCUMENTATION: PROGRAM MAINTENANCE MANUAL, INPUT DESCRIPTION, SUMMARY DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPT.
CONTACT: P. W. BOGLE, TRW, SOFTWARE TECHNOLOGY DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: HAWKEYE (TM), TITLE: HAWKEYE UNIVERSAL COBOL STANDARDIZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, RESTRUCTURING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 730000
IMPLEMENTATION LANGUAGE: COBOL ANSI
TOOL PORTABLE: YES, TOOL SIZE: REQUIRES 50K CHAR OF MEMORY
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LEASE AGREEMENT, COPYRIGHTED, "HAWKEYE" IS A REGISTERED TRADEMARK
TOOL SUPPORTED: YES, TOOL SUPPORT: BLACKHAWK DATA CORP
TOOL SUMMARY: HAWKEYE IS A COBOL STANDARDIZER, DESIGNED PRIMARILY TO OPERATE ON EXISTING COBOL PROGRAMS, PARTICULARLY THOSE WHICH ARE OLD, OVERL[illegible] LARGE, POORLY DOCUMENTED, AND/OR POORLY MAINTAINED. PERFORMS THE

FOLLOWING FUNCTIONS: 1) STANDARDIZES ALIGNMENT OR KEY WORDS IN DATA AND PROCEDURE DIVISION. 2) REPLACES A USER-DEFINED SET OF WORDS WITH ALTERNATE WORDS OR PHRASES; CAN DELETE NON-ESSENTIAL WORDS IF DESIRED. 3) NUMBERS, DE-NUMBERS, OR RE-NUMBERS THE PARAGRAPH NAMES, AND ALL REFERENCES THERETO. 4) LIMITS PROCEDURE DIVISION ENTRIES TO ONE VERB PER LINE. 5) STACKS MULTIPLE OPERANDS ONE BELOW THE OTHER. 6) CORRECTS MINOR FORMAT AND PUNCTUATION ERRORS AUTOMATICALLY. 7) INSERTS A BLANK LINE BETWEEN PARAGRAPHS AND 01 - LEVELS, AND SKIPS A PAGE BETWEEN DIVISIONS AND SECTIONS. 8) SINCE HAWKEYE'S DICTIONARIES ARE STORED IN A USER CONTROLLED EXTERNAL FILE, CAN EASILY BE SET UP TO HANDLE NEW COBOL VERBS AND/OR MANUFACTURER'S EXTENSIONS, INCLUDING ASSEMBLER ESCAPE ROUTINES.
DOCUMENTATION: USER'S MANUAL (41), DESCRIPTIVE BROCHURE (4)
DEVELOPER: BLACKHAWK DATA CORP.
CONTACT: JOHN BRINK, BLACKHAWK DATA CORP., 200 NO. MICHIGAN AVE., CHICAGO, IL, 60601, USA, 312-236-8473
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: IFTRAN (TM), TITLE: A PREPROCESSOR FOR FORTRAN
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, FORTRAN, IFTRAN, VHLL INPUT, IFTRAN, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, EDITING, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, GRAPHICS, LISTINGS, STATIC ANALYSIS, STRUCTURE CHECKING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, ASSERTION CHECKING, TUNING, TRACING, COMMAND INPUT, COMMANDS, PARAMETERS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES, TOOL SIZE: 25K WORKS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE FEE
TOOL SUPPORTED: YES, TOOL SUPPORT: GENERAL RESEARCH CORPORATION
TOOL SUMMARY: IFTRAN IS AN EXTENSION OF FORTRAN THAT SIMPLIFIES STRUCTURED PROGRAMMING AND TOP-DOWN DESIGN, AIDS SYSTEMATIC TESTING, SUPPORTS A PRACTICAL APPLICATION OF FORMAL VERIFICATION TECHNIQUES, AND AIDS IN SOFTWARE FAULT TOLERANCE. IFTRAN HAS A CONVENIENT SYNTAX FOR WRITING STRUCTURED PROGRAMMING CONTROL CONSTRUCTS. THE IFTRAN PREPROCESSOR TRANSLATES THE IFTRAN STATEMENTS INTO STANDARD FORTRAN WHILE PASSING ALL OTHER STATEMENTS UNCHANGED TO AN OUTPUT FILE WHICH MAY THEN BE COMPILED BY A FORTRAN COMPILER. A LISTING WHICH AUTOMATICALLY INDENTS THE SOURCE PROGRAM IS ALSO GENERATED. IFTRAN CAN BE USED AS A PROGRAM DESIGN LANGUAGE WHEN ENGLISH IS USED IN THE CONSTRUCTS INSTEAD OF FORTRAN. THE INDENTED LISTING IS VALUABLE FOR DESIGN REVIEWS.
DOCUMENTATION: USERS MANUAL

DEVELOPER: GENERAL RESEARCH CORP.
CONTACT: WILLIAM R. DE HAAN, GENERAL RESEARCH CORP, 5383 HOLLISTER AVE, PO BOX 6770, SANTA BARBARA, CA, 93111, USA, 805-964-7724
INFORMATION SOURCE: TOOL FAIR

ACRONYM: INFORM, TITLE: INFORM
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, DATA INPUT, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, GRAPHICS, TABLES, STATIC ANALYSIS, MANAGEMENT, DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): DEC PDP-11, DEC VAX-11
OS (OTHER SOFTWARE): VMS, RSX-11, IAS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE REQUIRED
TOOL SUPPORTED: YES, TOOL SUPPORT: CORTEX CORPORATION
TOOL SUMMARY: INFORM IMPROVES PROGRAMMING PRODUCTIVITY IN THE DEVELOPMENT OF ONLINE BUSINESS APPLICATIONS (APPLICATIONS WHICH FOCUS ON THE INTERACTION OF MULTIPLE USERS WITH A LARGER OR COMPLEX DATA BASE). FEATURES COMMON TO THESE APPLICATIONS AND ADDRESSED BY INFORM ARE: SCREEN HANDLING, FLEXIBLE DATA BASE STRUCTURE, DATA BASE ACCESS/INQUIRY, AND AD HOC AND PRODUCTION REPORTING REQUIREMENTS. USING TRADITIONAL APPLICATION TOOLS, THE PROGRAMMER WOULD HAVE TO USE A SCREEN GENERATOR, A JOB CONTROL LANGUAGE, A REPORT WRITER, A DATA BASE SYSTEM, STANDARD OPERATING SYSTEM UTILITIES, AS WELL AS A PROCEDURAL LANGUAGE TO DEVELOP THE APPLICATION. THIS FORCES THE PROGRAMMER TO DEVELOP EXPERTISE, NOT ONLY IN A VARIETY OF UNRELATED TOOLS, BUT ALSO IN HOW TO MAKE THEM WORK TOGETHER. INFORM INTEGRATES THE DEVELOPMENT TOOLS, FREEING THE PROGRAMMER TO CONCENTRATE ON THE UNIQUE PROCESSING REQUIREMENTS.
DOCUMENTATION: USER'S MANUAL, IMPLEMENTATION GUIDE, HELP
DEVELOPER: CORTEX CORPORATION
CONTACT: CORTEX CORPORATION, 55 WILLIAM STREET, WELLESLEY, MA, USA, 617-237-2304
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: INFORM/REFORM, TITLE: INFORM AND REFORM PROGRAMS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, INTERFACE ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00

TOOL SUMMARY: INFORM AND REFORM IDENTIFY AND DISPLAY FOR FORTRAN SUBROUTINE/VARIABLE INTERFACES FOR EACH ROUTINE. THIS TYPE OF DOCUMENTATION IS NOT ONLY USEFUL IN THE DEVELOPMENT AND MAINTENANCE OF SOFTWARE SYSTEMS, BUT ADDITIONALLY IS REQUIRED BY MANY DOCUMENTATION STANDARDS. THESE PROGRAM ARE NOT VERY LANGUAGE OR MACHINE DEPENDENT BUT ARE HIGHLY DEPENDENT ON T CAPABILITIES FOUND IN THE EDITOR AND CREF PROGRAMS OF THE TRW/TSS.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW NAVIGATIONS SYS ENG DEP
CONTACT: MARVIN W. KLOTZ, TRW NAVIGATIONS SYS ENG DEP, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-1581
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: INSERT, TITLE: INSERT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, DYNAMIC ANALYSIS, TUNING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: RATFOR
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES
TOOL SUMMARY: 'INSERT' WAS ORIGINALLY DESIGNED TO INSERT TRACE SOURCE STATEMENTS INTO A LARGE FORTRAN PROGRAM FOR THE ANALYSIS OF SUBMARINE STRUCTURES. 'INSERT' READS THE SOURCE CODE AND EXTRACTS THE NAMES OF EACH FORTRAN MODULE FROM THE MODULE HEADER CARD. 'INSERT' CONTINUES READING FORTRAN SOURCE CODE UNTIL IT FINDS THE FIRST EXECUTABLE STATEMENT. A NEW 'FIRST EXECUTABLE STATEMENT' IS THEN COPIED ONTO THE SOURCE OUTPUT FILE, TO WIT 'WRITE(7, "NAME")'. THE AUGMENTED STRUCTURAL ANALYSIS PROGRAM WAS THEN COMPILED AND EXECUTED, THE TAPE PRODUCED BY EXECUTION WAS EXAMINED FOR MODULE CALLS, AND THE UNUSED MODULES OF THE PROGRAM WERE DELETED. A SIMPLE MODIFICATION TO 'INSERT' WOULD ALLOW IT TO ALSO INSERT TEXT PRECEDING A 'RETURN' STATEMENT. THUS, THE EXECUTABLE FORTRAN TEXT WOULD BE BRACKETED BY USER INSERTED TRAPS, PARTICULARLY CALLS TO THE 'MONITOR' PACKAGE.
DEVELOPER: NSRDC
CONTACT: PETER N. ROTH, NSRDC, STRUCTURES DEPARTMENT, BETHESDA, MD, 20084, USA, 202-227-1851
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: INSTRU, TITLE: A SOFTWARE SYSTEM THAT INSTRUMENTS FOR DATA FLOW ANALYSIS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING

FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TRACING, PATH FLOW TRACING, DATA FLOW TRACING, LOGIC FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): 4JS2
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: NO
TOOL SUMMARY: INSTRU IS AN EXPERIMENTAL SOFTWARE TOOL THAT CAN BE USED TO INCREASE THE ERROR-DETECTION CAPABILITY OF A PROGRAM TEST BY INSTRUMENTING THE PROGRAM FOR DATA-FLOW ANOMALY DETECTION AND SYMBOLIC-TRACE GENERATION.
DOCUMENTATION: USERS GUIDE
REFERENCES: [HUAN78], J. C. HUANG, "PROGRAM INSTRUMENTATION AND SOFTWARE TESTING", COMPUTER, VOL. 11, NO. 4, 780400
[HUAN79], J. C. HUANG, "PROGRAM INSTRUMENTATION: A TOOL FOR SOFTWARE TESTING", INFOTECH STATE OF THE ART REPORT: SOFTWARE TESTING, VOL. 2, 790000
[HUAN79B], J. C. HUANG, "DETECTION OF DATA FLOW ANOMALY THROUGH PROGRAM INSTRU.", IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. SE-5, NO. 3, 790500
[HUAN80], J. C. HUANG, "INSTRUMENTING PROGRAMS FOR SYMBOLIC-TRACE GENERATION", COMPUTER, VOL. 13, NO. 12, 801200
DEVELOPER: UNIV OF HOUSTON
CONTACT: J. C. HUANG, UNIVERSITY OF HOUSTON, CENTRAL CAMPUS, DEPT OF COMP SCI, HOUSTON, TEXAS, 77004, USA, 713-749-2856
INFORMATION SOURCE: TOOL FAIR

ACRONYM: INTERFACE DOCUM, TITLE: INTERFACE DOCUMENTER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, OBJECT CODE INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THIS SOFTWARE PRODUCT ACCEPTS AS INPUT A COLLECTION OF OBJECT MODULES AND AUTOMATICALLY GENERATES CLEAR INFORMATION INDICATING ALL INTERFACES BETWEEN THE OBJECT MODULES. IT PRODUCES, FOR EACH MODULE, AN ANNOTATED LIST OF THE MODULES IT REFERENCES AS WELL AS A LIST OF ALL THE MODULES THAT REFERENCE IT. EXTERNAL DATA ITEMS ARE ALSO DOCUMENTED. THIS PRODUCT IS VERY EASY TO USE. IT ACCEPTS AS INPUTS THE SAME OBJECT MODULES THAT ARE NORMALLY PRESENTED TO YOUR LINKER (BINDER). THUS IN ORDER TO

GENERATE THE INTERFACE DOCUMENTATION YOU SIMPLY SUBMIT YOUR INPUTS TO THE INTERFACE DOCUMENTER INSTEAD OF THE LINKER (BINDER). THIS TOOL IS INDEPENDENT OF THE LANGUAGE IN WHICH THE PROGRAMS BEING DOCUMENTED ARE WRITTEN. IT WILL GENERATE INTERFACE DOCUMENTATION FOR FORTRAN, COBOL, ASSEMBLER, ETC. THIS PRODUCT IS A MEMBER OF SOFTOOL 80, AN INTEGRATED SET OF TOOLS MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: IORL, TITLE: INPUT/OUTPUT REQUIREMENTS LANGUAGE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, REQUIREMENTS LANGUAGE, TRANSFORMATION, EDITING, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 760000
IMPLEMENTATION LANGUAGE: MACRO-11
COMPUTER (OTHER HARDWARE): DEC/GT4X
OS (OTHER SOFTWARE): RT-11
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: STANDALONE, TURNKEY SYSTEM FOR DOCUMENTING SYSTEM DEFINITION, DESIGN AND TESTING REQUIREMENTS ASSOCIATED WITH THE DEVELOPMENT OF ANY COMPUTER BASED SYSTEM IN GENERAL. THE IORL SYSTEM PROVIDES AN INTERACTIVE GRAPHICS STORAGE AND RETRIEVAL CAPABILITY WITH THE PREC, SYSTEM REQUIREMENTS CAN BE GENERATED AND MODIFIED WITH AN THIS SYSTEM REQUIREMENTS CAN BE GENERATED AND MODIFIED WITH AN EDITOR, RETRIEVED BY LIGHT PEN, AND HARD COPIED ON 8 1/2 X 11 INCH PAPER.
DOCUMENTATION: TECHNICAL PAPER (USER MANUAL), USER MANUAL, OPERATIONS MANUAL
REFERENCES: [EVER78], C. R. EVERHART, "USER EXPERIENCE WITH A FORMALLY DEFINED REQUIREMENTS LANGUAGE IORL", 2ND US ARMY SOFT SYMP, 781025
[EVER78A], C. R. EVERHART, "SYSTEM REQUIREMENTS LANGUAGE - FOUNDATION FOR SOFTWARE ENGINEERING", 3RD ANNUAL NASA SUM SOFT ENG WKSHP, 780918
DEVELOPER: TELEDYNE BROWN ENGINEERING
CONTACT: C. R. EVERHART, TELEDYNE BROWN ENGINEERING, CUMMINGS RESEARCH PARK, HUNTSVILLE, AL, 35807, USA, 205-532-1610
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: IPDS, TITLE: INTERACTIVE PROGRAM DEVELOPMENT SYSTEM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, DIAGNOSTICS, LISTINGS, DYNAMIC

ANALYSIS, ASSERTION CHECKING, FORMAL VERIFICATION,
STAGE OF DEVELOPMENT: CONCEPT
TOOL AVAILABLE: NO
TOOL SUMMARY: IPDS IS A TOOL BEING PLANNED BY SEVERAL MEMBERS OF THE COMPUTER SCIENCE DEPARTMENT AT CORNELL UNIVERSITY. THE TOOL WILL BE BASED ON THE PRL SYSTEM DESCRIBED IN A RECENT TECHNICAL REPORT. THE REPORT EXPLORES THE VIEW THAT CORRECT PROGRAMS ARE MOST NATURALLY PRODUCED AS A RESULT OF CORRECT DEVELOPMENT AND THAT REASONING ABOUT CODE IS NOT THE PROPER PARADIGM FOR SUCH DEVELOPMENT. INSTEAD PROGRAMMERS SHOULD REASON ABOUT SPECIFICATIONS IN A LOGIC FORMULATED FOR CONSTRUCTIVELY PROVING THAT SPECIFICATIONS HAVE ACCEPTABLE IMPLEMENTATIONS; FROM THESE PROOFS CODE MAY BE EXTRACTED. THIS APPROACH, PROVIDES A UNIFORM VIEW OF BOOLEAN FORMULAS AND PROGRAM SPECIFICATIONS AS PROVABLE PROPOSITIONS. THERE IS NO ASSERTION/CODE DISTINCTIONS BECAUSE PROOFS INCLUDE NEITHER ASSERTIONS NOR CODE. THUS, PROGRAMMERS TRULY CONCENTRATE ON PROOF DEVELOPMENT, NOT ON CODING. EXECUTABLE TEXT IS SIMPLY A VALUABLE BY-PRODUCT OF CORRECT REASONING.
REFERENCES: [BATE79], JOSEPH LOUIS BATES, "A LOGIC FOR CORRECT PROGRAM DEVELOPMENT", CORNELL TECH REPORT, TR 79-388, 790800
DEVELOPER: CORNELL UNIVERSITY
CONTACT: JOSEPH LOUIS BATES, CORNELL UNIVERSITY, DEPT OF COMPUTER SCIENCE, ITHACA, NY, 14853, USA,
INFORMATION SOURCE: CORNELL TECHNICAL REPORT

ACRONYM: ISDS, TITLE: INTEGRATED SOFTWARE DEVELOPMENT SYSTEMS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, FORTRAN, JOVIAL, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPLEXITY MEASUREMENT, STRUCTURE CHECKING,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: IFTRAN
TOOL SIZE: CORE: 128K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XX (DISK: 6M)
OS (OTHER SOFTWARE): GCOS
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUMMARY: ALLOWS INTERACTIVE CHARTING OF SOFTWARE DESIGN AND ANALYSIS OF CHARTS FOR CONSISTENT STRUCTURING. ALSO ALLOWS SOURCE CODE INPUT (FORTRAN, JOVIAL, PDL AND OTHER BEING DEVELOPED) TO ANALYZE THE CODE FOR COMPLEXITY AND STRUCTURE.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: GENERAL ELECTRIC
CONTACT: ORIN BARKER, GENERAL ELECTRIC, CSP3-35, SYRACUSE, NY, 13221, USA, 315-456-7111
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: ISUS, TITLE: INTERACTIVE SEMANTIC UPDATE SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, SRTRAN, TRANSFORMATION, EDITING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, SRTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, CHANGE CONTROL, ERROR CHECKING, STRUCTURE CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: SRTRAN
TOOL PORTABLE: YES, TOOL SIZE: APPROX. 40K NC'SS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSED SOFTWARE SYSTEMS
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE RESEARCH ASSOCIATES
TOOL SUMMARY: ISUS IS A SYSTEM THAT COMBINES FEATURES OF A TEXT EDITOR, A SOURCE CODE CONTROL SYSTEM, A CONFIGURATION MANAGEMENT SYSTEM, AND A STATIC ANALYZER TO PROVIDE AN INTEGRATED FACILITY FOR MAINTENANCE OF COMPLEX SOFTWARE SYSTEMS. THE MOST IMPORTANT FEATURE OF ISUS IS THAT IT HAS THE CAPABILITY TO PERFORM SINGLE AND MULTIPLE MODULE CONSEQUENCE ANALYSIS, EITHER INTERACTIVELY OR IN BATCH MODE. THE ISUS SYSTEM IS DESIGNED AS AN INTERACTIVE TOOL, RESPONDING TO USER COMMANDS, BUT IT CAN ALSO BE RUN IN A BATCH MODE, READING FROM A PREPARED COMMAND FILE, FOR ''BACKGROUND'' RUNS PERFORMING THE DAY TO DAY CHORES ASSOCIATED WITH SYSTEM MAINTENANCE. THE CURRENT VERSION OF ISUS PROCESSES FORTRAN PROGRAMS WHICH HAVE BEEN ORGANIZED INTO A SPECIAL FORMAT, CALLED A PROGRAM MASTER (PM).
DOCUMENTATION: REFERENCE MANUAL, USERS GUIDE
REFERENCES: [HIRS79], M. A. HIRSCHBERG, "A SEMANTIC UPDATE SYSTEM FOR SOFTWARE MAINTENANCE", PROCEEDINGS COMPCON, SAN FRANCISCO, CA, PP 307-309, 0
DEVELOPER: SOFTWARE RESEARCH ASSOCIATES
CONTACT: EDWARD F. MILLER, SOFTWARE RESEARCH ASSOCIATES, PO BOX 2432, SAN FRANCISCO, CA, 94126, USA, 415-957-1441
MORTON HIRSCHBERG, US ARMY BALLISTIC RESEARCH LABORATORY, ABERDEEN PROVING GROUND, ABERDEEN, MD, 21005, USA, 301-278-4271
INFORMATION SOURCE: TOOL FAIR

ACRONYM: ITB, TITLE: INTERACTIVE TEST BED
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, SRTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, SRTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: SRTRAN

TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE RESEARCH ASSOCIATES
TOOL SUMMARY: THE INTERACTIVE TEST BED (ITB) SYSTEM IS A SYSTEM FOR PERFORMING QUALITY ASSURANCE ANALYSIS OF MODULAR SOFTWARE SYSTEMS. INVOCATION OF TWO MACROS IS SUFFICIENT TO CREATE A TEST BED FOR TESTING A GIVEN ROUTINE. ONCE THE TEST BED IS CREATED, ITB ALLOWS THE USER INTERACTIVE ACCESS TO ANY OF THE VARIABLES. THE USER IS EMPOWERED TO EXECUTE A SERIES OF TESTS OF THE PROGRAM, TO MANIPULATE AND EXAMINE THE VALUES OF VARIABLES AS WELL AS CONSULT THE (CI) COVERAGE REPORT BETWEEN EXECUTIONS. THE "NOT HIT" COMMAND PINPOINTS THE SEGMENTS WHICH HAVE NOT YET BEEN EXECUTED. BY SAVING COPIES OF THE ENVIRONMENT OF VARIABLES, ITB CAN HELP PROCESS COMPLEX TREE-STRUCTURED SETS OF TEST CASES. ADDITIONALLY, ITB IS USEFUL IN THE SOFTWARE TESTING DOCUMENTATION PROCESS.
DOCUMENTATION: REFERENCE MANUAL
DEVELOPER: SOFTWARE RESEARCH ASSOCIATES
CONTACT: EDWARD F. MILLER, SOFTWARE RESEARCH ASSOCIATES, PO BOX 2432, SAN FRANCISCO, CA, 94126, USA, 415-957-1441
INFORMATION SOURCE: TOOL FAIR

ACRONYM: JAVS, TITLE: JOVIAL AUTOMATED VERIFICATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, JOVIAL, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, INTERFACE ANALYSIS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TUNING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL J3
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00, HONEYWELL 6XX
TOOL SUMMARY: JAVS IS A PROGRAM WHICH SUPPORTS A METHODOLOGY FOR SYSTEMATICALLY AND COMPREHENSIVELY TESTING COMPUTER SOFTWARE. THE METHODOLOGY USES THE STRUCTURE OF THE SOFTWARE UNDERGOING TEST AS THE BASIS FOR ANALYSIS FOR AN AUTOMATED VERIFICATION SYSTEM (AVS). JAVS ITSELF IS A SERIES OF TOOLS WHICH PROVIDE A MEANS OF MEASURING THE EFFECTIVENESS OF BOTH INDIVIDUAL AND CUMULATIVE SOFTWARE TEST CASES, A CAPABILITY TO FACILITATE THE CONSTRUCTION OF TEST DATA THAT WILL THOROUGHLY EXERCISE THE SOFTWARE, AND AN ANALYSIS OF RETESTING REQUIREMENTS FOLLOWING SOFTWARE MODIFICATION. JAVS CAN PROVIDE THE FOLLOWING: (1) ANALYZE AND FORMAT SOURCE TEXT (2) PERFORM FLOW ANALYSIS, (3) INSERT INSTRUMENTATION FOR PERFORMANCE MEASUREMENT, (4) DESCRIBE INTER-MODULE RELATIONSHIPS, (5) GENERATE TEST MEASUREMENT RESULTS.
DOCUMENTATION: USER'S GUIDE, REFERENCE MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100

[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: GENERAL RESEARCH CORPORATION
CONTACT: N. B. BROOKS, GENERAL RESEARCH CORPORATION, 5383 HOLLISTER AVE., SANTA BARBARA, CA, 93111, USA, 805-964-7724
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG, RADC-TR-80-13, INTERIM REPORT

ACRONYM: JET, TITLE: JOVIAL EDIT AND TIDY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3B-2, TRANSFORMATION, EDITING, FORMATTING, USER OUTPUT, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PL/1
TOOL SIZE: CORE: 384K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUMMARY: PREPROCESSING PROGRAM WHICH PROVIDES SOURCE FORMATTING AND SOURCE EDITING. J3B-2 SOURCE IS INDENTED TO PROPER LEVEL OF NESTING. ALSO INCLUDES A STANDARD MODULE OPTION WHICH ALLOWS SPECIFIED FORMAL PARAMETERS AND THEIR DECLARATIONS TO BE REMOVED FROM THE SOURCE SO THAT COMPOOL MAY BE USED.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: GENERAL DYNAMICS
CONTACT: L. C. KLOS, GENERAL DYNAMICS, P.O. BOX 748, FORT WORTH, TX, 76101, USA, 817-732-4811
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: JIGSAW, TITLE: JOVIAL INSTRUMENTOR, GENERAL SYNTAX ANALYZER AND WORD PROC
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, JOVIAL, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, AUDITING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN ANSI
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00, UNIVAC 11XX
TOOL SUMMARY: JIGSAW PROVIDES THE CAPABILITY TO DEVELOP A STRUCTURED JOVIAL J3 SOURCE PROGRAM THROUGH THE USE OF "STRUCTURED" MACRO STATEMENTS (E.G., WHILE, IF-FOR). JIGSAW TRANSLATES THESE MACROS INTO STRUCTURED" JOVIAL J3 CODE BLOCKS. JIGSAW PROVIDES THE CAPABILITY TO AUDIT A JOVIAL J3 SOURCE PROGRAM BY ANALYZING THE PROGRAM FOR VIOLATION OF CODING STANDARDS AND CONVENTIONS. JIGSAW PROVIDES THE CAPABILITY TO ANALYZE THE PERFORMANCE OF

PROGRAM WRITTEN IN JOVIAL J3. JIGSAW INDICATES THE AMOUNT OF CODE BEING EXECUTED, HOW OFTEN A SEGMENT OF CODE EXECUTED, AND THE THREADS, AS THE PROGRAM EXECUTED. JIGSAW INPUTS CONSIST OF CONTROL PARAMETERS, A FILE CONTAINING INSTRUMENTING INSTRUCTIONS AND A JOVIAL J3 SOURCE PROGRAM. ITS OUTPUT CONSISTS OF JOVIAL J3 SOURCE PROGRAM LISTINGS AND A LISTING CONTAINING PROGRAMING EXECUTION STATISTICS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: JOCIT, TITLE: JOVIAL COMPILER IMPLEMENTATION TOOL
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, JOVIAL, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, INTERMEDIATE CODE, USER OUTPUT, DIAGNOSTICS, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 750000
IMPLEMENTATION LANGUAGE: SYMPL
TOOL PORTABLE: NO, TOOL SIZE: CORE: 50K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX (DISK: 1.67M)
OS (OTHER SOFTWARE): GCOS, MULTICS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THE JOVIAL COMPILER IMPLEMENTATION TOOL (JOCIT) WILL ASSIST IN THE GENERATION OF AN EXTREMELY HIGH QUALITY JOVIAL/J3 COMPILER WHICH CONFORMS TO AFM 100-24, STANDARD COMPUTER PROGRAMMING LANGUAGE FOR AIR FORCE COMMAND AND CONTROL SYSTEMS. SINCE APPROXIMATELY 70 PERCENT OF THE COMPILER IS PRODUCED AUTOMATICALLY BY JOCIT, THE AMOUNT OF EFFORT AND TIME, THUS COST, TO PRODUCE A JOVIAL J3 COMPILER IS SUBSTANTIALLY REDUCED AS IS THE RISK INVOLVED. MANY GENERAL OPTIMIZATION ALGORITHMS FOR OBJECT CODE ARE AUTOMATICALLY INSERTED INTO THE COMPILER BUILT WITH THE JOCIT. THIS ALLOWS ALMOST ALL OF THE EFFORT EXPENDED IN IMPLEMENTING THE COMPILER TO BE USED TO TAKE ADVANTAGE OF THE TARGET HARDWARE. MACHINE DEPENDENCIES: JOCIT PRESENTLY EXISTS IN A 45K-36 BIT WORD ENVIRONMENT ON THE HIS 6180 AT RADC. HOWEVER, IT COULD BE RECONFIGURED TO A SYSTEM AS SMALL AS 96K- 16 BIT WORDS. JOCIT CAN PRODUCE COMPILERS FOR ANY TARGET MACHINE CAPABLE OF HOSTING THE COMPILER.
DOCUMENTATION: TECHNICAL WORKBOOK (4000), COMPILER USER'S MANUAL (200), FINAL REPORT (70)

DEVELOPER: COMPUTER SCIENCES CORPORATION
CONTACT: RICHARD MOTTO, ROME AIR DEVELOPMENT CENTER (ISIE), GRIFFISS AIR FORCE BASE, NEW YORK, NY, 13441, USA, 315-330-4875
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: JOVIAL TCA, TITLE: JOVIAL J73/I TEST COVERAGE ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J73/I, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, JOVIAL, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780000
IMPLEMENTATION LANGUAGE: JOVIAL J73/I
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20
PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): INFORMALLY DELIVERED TO WRIGHT-PATTERSON AIR FORCE BASE
TOOL SUPPORTED: NO
TOOL SUMMARY: THE TOOL PROVIDES THE CAPABILITY TO MEASURE THE "TESTEDNESS" OF JOVIAL J73/I PROGRAMS. THE TOOL INSTRUMENTS THE J73/I PROGRAM SO THAT WHEN THE PROGRAM EXECUTES, EACH LOGICAL SEGMENT OF THE PROGRAM WILL COUNT THE NUMBER OF TIMES IT WAS EXECUTED. A SUMMARY OF THESE COUNTS WILL BE PRINTED AT THE CONCLUSION OF PROGRAM EXECUTION. THE USER WILL THEN BE ABLE TO IDENTIFY SEGMENTS NOT EXECUTED BY A SUITE OF TEST CASES.
DOCUMENTATION: MAINTENANCE MANUAL (109)
DEVELOPER: BOEING AEROSPACE CO.
CONTACT: ROBERT L. GLASS, BOEING AEROSPACE CO., PO BOX 3999, SEATTLE, WA, 98124, USA, 206-773-0664
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: JOVIAL/J3SC, TITLE: JOVIAL/J3 STATISTICS COLLECTOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 770000
IMPLEMENTATION LANGUAGE: JOVIAL J3
TOOL SIZE: CORE: 80K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THE JOVIAL/J3 STATISTICS COLLECTOR IS A SOFTWARE TOOL DEVELOPED IN-HOUSE BY RADC TO MEASURE USAGE OF VARIOUS CONSTRUCTS AND FEATURES OF THE JOVIAL/(J3) HIGHER ORDER COMPUTER PROGRAMMING LANGUAGE. COUNTS AVERAGE AND PERCENTAGES CAN BE OBTAINED FOR A GIVEN SOURCE PROGRAM REGARDING TYPES OF DATA USED; SIZE AND NATURE OF ARRAYS

AND TABLES; TYPES OF STATEMENTS APPEARING; USE AND NESTING OF COMPLEX STATEMENTS; COMMENTS; DEFINE DIRECTIVES; AND OTHER ASPECTS OF SOURCE CODE USAGE BY PROGRAMMERS. IT IS HOPED THAT THE INFORMATION OBTAINED BY THE STATISTICS COLLECTOR WILL PROVIDE GUIDANCE TOWARD THE INSTRUCTION OF PROGRAMMERS IN MORE EFFICIENT AND LESS ERROR-PRONE PROGRAMMING METHODS, THE WRITING OF BENEFICIAL CHANGES TO THE LANGUAGE. MACHINE DEPENDENCIES: THE JOVIAL/J3 STATISTICS COLLECTOR IS CURRENTLY EQUIPPED TO RUN ONLY ON THE HONEYWELL 600/6000 GCOS COMPUTER SYSTEM, BUT CAN BE MODIFIED TO RUN ON OTHER SYSTEMS.
DOCUMENTATION: TECHNICAL PAPER
DEVELOPER: RADC/ISIS
CONTACT: RICHARD T. SLAVINSKI, ROME AIR DEVELOPMENT CENTER (ISIE), GRIFFISS AIR FORCE BASE, NY, 13441, USA, 315-330-2748
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: JOVIAL/VS, TITLE: JOVIAL COMPILER VALIDATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JCVS, JOVIAL J3, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL J3
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THESE TOOLS ASSIST IN THE TESTING AND DEBUGGING, ACCEPTANCE TESTING, AND MAINTENANCE OF JOVIAL (J3), JOVIAL (J73/I), AND JOVIAL (J73) COMPILERS. THE JOVIAL (J3) VALIDATION SYSTEM TESTS JOVIAL (J3) COMPILERS FOR CONFORMANCE TO MIL-STD-1588 USAF). THE JOVIAL (J73/I) VALIDATION SYSTEM TESTS JOVIAL (J73/I) COMPILERS FOR CONFORMANCE TO MIL-STD-1589 (USAF). THE JOVIAL (J73) VALIDATION SYSTEM TESTS JOVIAL (J73) COMPILERS FOR CONFORMANCE TO MIL-STD-1589A (USAF). WHEREVER POSSIBLE, THE TESTS ARE SELF CHECKING AND THUS REQUIRE MINIMAL EFFORT TO ANALYZE THE RESULTS OF MOST OF THE TEST SEQUENCES. MACHINE DEPENDENCIES: NOT MACHINE DEPENDENCIES ARE SPECIFIED BY DEFINE DECLARATIONS WHICH PRECEDE THE DATA DECLARATIONS AND TEST MODULES, THUS LOCALIZING THESE DEPENDENCIES TO THIS PRELIMINARY CODE. A FEW ARE NOTED BY COMMENTS IN THE MODULES THEMSELVES.
DOCUMENTATION: REFERENCE AIAA ABSTRACT
DEVELOPER: RADC/ISIS
CONTACT: RADC/ISIS, GRIFFISS AFB, NY, 13441, USA, 315-330-7834
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: JOYCE, TITLE: JOYCE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING

JOYCE

FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, EDITING, USER OUTPUT, GRAPHICS, FLOW CHARTS, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: MCDONNELL DOUGLAS ASTRONAUTICS COMPANY
TOOL SUMMARY: JOYCE IS AN AUTOMATIC STATIC ANALYSIS TOOL FOR FORTRAN PROGRAMS. IT ACCEPTS AS PRIMARY INPUT FORTRAN SOURCE DECKS IN THE FORM OF CARD DECKS OR CDC COMPILE FILES. THE SOURCE DECKS ARE EDITED AND THE EDITED INFORMATION IS COMBINED TO PRODUCE SEVERAL COMBINATIONS OF DESCRIPTIVE REPORTS. JOYCE COMPILES TABLES OF SYMBOLS AND CROSS REFERENCES OF SYMBOL USAGE WITHIN EACH ROUTINE OF A PROGRAM. THESE SYMBOLS INCLUDE FORTRAN VARIABLE NAMES, THE NAMES OF ANY REFERENCE FUNCTION OR MODULE, ANY ENTRY POINTS, AND ALL I/O FILE REFERENCES. FLOWLISTS ARE PROVIDED IN THE FORM OF MICROFILM FORTRAN LISTINGS WITH ALL TRANSFERS INDICATED BY ARROWS TO THE RIGHT OF THE STATEMENT TEXT AND ALL DO LOOPS INDICATED BY BRACKETS TO THE LEFT.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[STUC76], L. G. STUCKI, "METHODOLOGY FOR PRODUCING RELIABLE SOFTWARE", NASA CR 144769, TWO VOLUMES, 760300
DEVELOPER: MCDONNELL DOUGLAS ASTRONAUTICS COMPANY
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: JSDD, TITLE: JOVIAL STRUCTURED DESIGN DIAGRAMER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL J3
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
PUBLIC DOMAIN: YES
TOOL SUMMARY: THE JSDD PRODUCES FLOW INVOCATION DIAGRAMS OF SOFTWARE WRITTEN IN EXTENDED JOVIAL J3. EXTENDED JOVIAL J3 IS STANDARD JOVIAL J3 PLUS CONTEMPORARY FLOW CONTROL CONSTRUCTS (A MULTICS PL/1 PREPROCESSOR FOR TRANSLATING THESE EXTENSIONS INTO JOVIAL J3 IS ALSO AVAILABLE).
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
REFERENCES: [RADC78], ROME AIR DEVELOPMENT CENTER, "JOVIAL STRUCTURED DESIGN DIAGRAMER - FINAL TECHNICAL REPORT", RADC-TR-78-9 (FOUR VOLUMES), 780200
DEVELOPER: DRAPER LABORATORY
CONTACT: MARK WHITWORTH, DRAPER LABORATORY, 555 TECHNOLOGY SQUARE, CAMBRIDGE, MA, 02139, USA, 617-258-1179

JSDD

INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: LANG INSTRUCTOR, TITLE: LANGUAGE INSTRUCTOR
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, COBOL, LISP, APL, ALGOL, SNOBOL, USER OUTPUT, USER-ORIENTED TEXT, STATIC ANALYSIS, MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 771200
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THIS INTERACTIVE SYSTEM IS A SET OF PROGRAMS FOR SETTING UP A COMPUTER AIDED INSTRUCTION SYSTEM. THE INSTRUCTIONS FOR USE OF THE SYSTEM ARE CONTAINED IN THE DIALOGUE. THERE IS PROTECTION FOR THE USER WHO CANNOT NORMALLY MODIFY THE INSTRUCTION DATABASE. IF THE USER IS ORGANIZING THE SYSTEM HE CAN UPDATE THE SYSTEM WITH NEW SUBJECTS OR DETAILS ON A SUBJECT. PRESENT SUBJECTS IN THE SYSTEM ARE FORTRAN COBOL, ALGOL, LISP, SNOBOL AND APL.
DOCUMENTATION: TECHNICAL, USER
DEVELOPER: B. FERGUSON
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: LAYOUT, TITLE: GRAPHICAL REPRESENTATION OF DATA STRUCTURES
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): IBM 360/370
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY OUTSIDE BOEING MAY BE RESTRICTED
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY
TOOL SUMMARY: LAYOUT PRODUCES A GRAPHICAL REPRESENTATION OF DATA STRUCTURES IN EXTERNAL FILES OR INTERNAL STORAGE. IT CAPTURES THE RELATIONSHIPS BETWEEN THE FIELD OF THE DATA STRUCTURE AS WELL AS DETAILED INFORMATION ON THE FIELDS INCLUDING NAME, SIZE, TYPE, SOURCE, DERIVATION, AND CONTENTS.
DOCUMENTATION: USERS MANUAL, TECHNICAL NEWSLETTER
REFERENCES: [BCSC79], BOEING COMPUTER SERVICES COMPANY, "AUTOMATED SOFTWARE TOOLS CATALOG", BCS 10236, 790800
DEVELOPER: BOEING COMPUTER SERVICES COMPANY
CONTACT: GARY KAMPEN, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346, SEATTLE, WA, 98124, USA, 206-575-5393
INFORMATION SOURCE: BCS SOFTWARE TOOLS CATALOG

ACRONYM: LEXICON, TITLE: LEXICON
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN 3
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): ECL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM WILL READ A SEQUENCE OF SYMBOLIC ELEMENTS WHICH CONTAIN, AS COMMENTS, DEFINITIONS OF VARIABLES AND WRITE OUT THESE DEFINITIONS IN ALPHABETIC ORDER IN ORDER TO PRODUCE A DICTIONARY OF COMMON BLOCK VARIABLES USING DEFINITIONS (COMMENTS) WHICH ARE INTERNAL TO THE SYMBOLIC ELEMENTS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: LIBRARIAN, TITLE: SOURCE PROGRAM MANAGEMENT LIBRARY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, TRANSFORMATION, EDITING, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, VERSION CONTROL, LIBRARY MANAGEMENT, FILES MANAGEMENT, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE LIBRARIAN IS A SOURCE PROGRAM MANAGEMENT SYSTEM. SOURCE PROGRAMS CAN BE STORED AND SUBSEQUENTLY RETRIEVED AND UPDATED USING SYSTEM COMMANDS. SYSTEM FACILITIES ARE INCLUDED TO PROTECT AGAINST UNAUTHORIZED ACCESS TO MASTER FILES. PROGRAMMING FACILITIES INCLUDE COMMANDS FOR INSERTING, DELETING AND REPLACING SOURCE STATEMENTS; SYNTAX CHECKING OF COBOL PROGRAMS; EDITING AND SCANNING; PROVISIONS FOR COPYING; RENAMING AND APPLYING TEMPORARY CHANGES TO SOURCE PROGRAMS; USER EXITS FOR SPECIALIZED OWN-CODE INTERFACES; AND THE ABILITY TO REARRANGE AND EXPAND STATEMENTS WITHIN A SOURCE PROGRAM. MANAGEMENT FACILITIES INCLUDE THE ABILITY TO PRODUCE REPORTS SHOWING THE STATUS AND ATTRIBUTES OF ALL SOURCE PROGRAMS WITHIN A MASTER FILE, INCLUDING A HISTORICALLY ACCURATE, DATE- STAMPED AUDIT TRAIL OF ALL CHANGES MADE TO A PROGRAM. A TSO INTERFACE OPTION PERMITS TSO USERS DIRECT ACCESS TO PROGRAM MODULES.
DOCUMENTATION: NONE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100

[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: APPLIED DATA RESEARCH, INC.
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG, RADC-TR-80-13, INTERIM REPORT

ACRONYM: LIBREF, TITLE: LIBRARY REFERENCE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): RSX-11
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS
TOOL SUPPORTED: YES, TOOL SUPPORT: DIGITAL EQUIPMENT CORPORATION
TOOL SUMMARY: LIBREF IS A UTILITY WHICH IS VALUABLE IN THE DOCUMENTATION AND MAINTENANCE OF LARGE APPLICATION SYSTEMS WHICH USE COBOL AS THEIR SOURCE LANGUAGE. ITS PRIMARY FUNCTION IS TO CAPTURE DATA AND GENERATE REPORTS SHOWING THE RELATIONSHIPS BETWEEN THE COBOL LIBRARY AND THE APPLICATIONS WHICH USE THE LIBRARY FUNCTION IN THEIR DEVELOPMENT. TWO REPORTS ARE GENERATED IN AN 8-1/2 X 11 FORMAT. THE FIRST REPORT IS A CROSS REFERENCE LISTING BY PROGRAM NAME. THE SECOND REPORT IS A CROSS REFERENCE LISTING BY LIBRARY ENTRY NAME. FOR EACH LIBRARY NAME, ALL THE PROGRAMS IN WHICH IT IS USED ARE LISTED.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: DIGITAL EQUIP. CORP., ASK(MLS-2/M46)-A0100, 146 MAIN ST., MAYNARD, MA.
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: LILITH, TITLE: A MODULA MACHINE
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, TEXT INPUT, CODE INPUT, MODULA II, MODULA, TRANSFORMATION, TRANSLATION, COMPILATION, EDITING, OPTIMIZATION, MACHINE OUTPUT, OBJECT CODE OUTPUT, USER OUTPUT, GRAPHICS, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: MODULA II
COMPUTER (OTHER HARDWARE): LILITH
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSED BY ETH
TOOL SUPPORTED: NO

TOOL SUMMARY: LILITH IS A TOOL FOR THE CREATION OF PROGRAMS AND DOCUMENTS. IT IS A GENERAL PURPOSE COMPUTER CREATED TO PROVIDE AN OPTIMAL ENVIRONMENT FOR THE PROGRAMMING LANGUAGE MODULA II. THE MERIT OF THIS SYSTEM AS A PROGRAM AND DOCUMENT PREPARATION TOOL RESTS UPON THE FOLLOWING FEATURES OF THE SYSTEM: (1) THE EFFECTIVENESS AND VERSATILITY OF THE LANGUAGE MODULA II (2) THE HIGH PERFORMANCE IN PROGRAM EXECUTION ACHIEVED BY LILITH BECAUSE OF ITS EXTREMELY COMPACT COMPILED CODE AND ITS SPECIALIZED ARCHITECTURE. (3) THE ABILITY TO SHOW ELABORATE IMAGES WITH A HIGH RESOLUTION DISPLAY AND THE ABILITY TO MANIPULATE THEM WITH POWERFUL FIRMWARE-IMPLEMENTED GRAPHIC OPERATIONS. (4) THE EFFICIENCY FOR ENTERING USER COMMANDS AVAILABLE FROM THE COMBINATION OF THE KEYBOARD AND MOUSE AS INPUT DEVICES. (5) THE RELIABILITY OF BOTH SOFTWARE AND HARDWARE RESULTING FROM THE AVOIDANCE OF UNNECESSARY COMPLEXITY.
DEVELOPER: INSTITUT FUER INFORMATIK, ETH
CONTACT: RICHARD OHRAN, BRIGHAM YOUNG UNIVERSITY, EE DEPT, 459 CLYDE BUILDING, PROVO, UTAH, 84602, USA, 801-378-4015
INFORMATION SOURCE: TOOL FAIR

ACRONYM: LOGIC, TITLE: LOGIC
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TIMING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: LOGIC IS A GROUP OF QUALITY ASSURANCE TOOLS (IOVAR, ESTIME, PATH, FILER, COUNTER, TRANMOD) THAT USE THE TABLE INFORMATION GENERATED BY PACE TO STATICALLY VERIFY COMPLIANCE WITH DETAIL DESIGN SPECIFICATIONS IN FORTRAN PROGRAMS. LOGIC AUTOMATICALLY DETERMINES ALL EXECUTION PATHS, VERIFIES USAGE OF INPUT/OUTPUT VARIABLES, COUNTS THE NUMBER OF CDC 7600 MACHINE INSTRUCTIONS BETWEEN ENTRY AND EXIT POINTS, AND COMPUTES THE AVERAGE AND MAXIMUM RUN TIME FOR A ROUTINE. THE INPUT FOR LOGIC IS THE OUTPUT FROM PACE WHICH INCLUDES A LISTING OF THE USER SOURCE CODE AND TABLE INFORMATION. LOGIC IS WRITTEN IN THE FORTRAN EXTENDED LANGUAGE FOR USE ON THE CDC 7600, BUT MANY OF ITS FEATURES COULD BE USED ON OTHER COMPUTERS.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: LOGICFLOW, TITLE: A SOFTWARE TOOL FOR DESIGN, DEVELOPMENT, AND DOCUMENTATION
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, FORTRAN, BAL, ASSEMBLY LANGUAGE, FORTRAN IV (G1), VHLL INPUT, DESIGN LANGUAGE, DL, TRANSFORMATION, EDITING, RESTRUCTURING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, JOVIAL, USER OUTPUT, GRAPHICS, FLOW CHARTS, DESIGN CHARTS, LISTINGS, STATIC ANALYSIS, COMPLEXITY MEASUREMENT, AUDITING, ERROR CHECKING, STRUCTURE CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PARTS OF LOGICFLOW ARE PROPRIETARY
TOOL SUPPORTED: YES, TOOL SUPPORT: LOGICON
TOOL SUMMARY: THE LOGICFLOW SYSTEM IS A LOGICON-DEVELOPED SOFTWARE SYSTEM WHICH AIDS THE DESIGN, DEVELOPMENT, ANALYSIS AND DOCUMENTATION OF RELIABLE SOFTWARE. DURING THE DESIGN PHASE, LOGICFLOW ACCEPTS PROGRAM DESIGN LANGUAGE (PDL) AND PRODUCES A GRAPHIC REPRESENTATION OF THAT DESIGN IN FLOWCHART FORM FOR EVALUATION. SINCE LOGICFLOW ANALYZES THE SYNTAX OF THE INPUT TO PRODUCE THE GRAPHIC REPRESENTATION AT THIS STAGE, IT ALSO CHECKS FOR BASIC LOGIC ERRORS SUCH AS IMPROPER LOOP CONSTRUCTS. METRICS OF THAT DESIGN CAN BE OBTAINED BY INVOKING A METRICS EVALUATOR. THIS FEATURE PROVIDES THE ANALYST NORMALIZED METRICS ON SELECTED DESIGN CHARACTERISTICS SUCH AS STRUCTUREDNESS, SIMPLICITY, AND COMPLEXITY. A CROSS-REFERENCE OF ALL DESIGN NAMES CAN BE OBTAINED USING THE CROSS-REFERENCE GENERATOR. THE LOGICFLOW FLOWCHARTER AUTOMATICALLY PRODUCES HIGH-QUALITY FLOWCHARTS FROM DESIGN LANGUAGE OR FORTRAN SOURCE.
DOCUMENTATION: USERS GUIDE
DEVELOPER: LOGICON
CONTACT: DARIO DE ANGELIS, LOGICON, 255 W. FIFTH ST., PO BOX 471, SAN PEDRO, CA, 90733, USA, 213-831-0611
ROBERT J. GALVAN, LOGICON, 255 W. FIFTH ST., PO BOX 471, SAN PEDRO, CA, 90733, USA, 213-831-0611
ROGER U. FUJII, LOGICON, 255 W. FIFTH ST., PO BOX 471, SAN PEDRO, CA, 90733, USA, 213-831-0611
INFORMATION SOURCE: TOOL FAIR

ACRONYM: LOGIFLOW, TITLE: LOGIFLOW
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, ASSEMBLY
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: LOGIFLOW IS A SEMI-AUTOMATIC FUNCTIONAL FLOWCHARTING TOOL WHICH BRIDGES THE GAP BETWEEN THE COMPLETELY AUTOMATIC FLOWCHARTERS LIKE AUTOFLOW AND FLOWGEN AND THE COMPLETELY MANUAL APPROACH. LOGIFLOW PROVIDES THE USER COMPLETE FLEXIBILITY IN FUNCTIONALLY GROUPING STATEMENTS TO BE FLOWCHARTED. THE USER MAY BE AS DETAILED OR AS GENERAL AS DESIRED. LOGIFLOW OPERATES IN EITHER A BATCH OR REMOTE TERMINAL ENVIRONMENT. THE FLOWCHARTS ARE PRODUCED BY CALCOMP PLOTTERS. ALTHOUGH DESIGNED FOR USE PRIMARILY WITH FORTRAN PROGRAMS, LOGIFLOW MAY BE USED TO CHART ANY TEXTUAL MATERIAL. FOR ANY REQUIREMENT WHERE MEANINGFUL, FUNCTIONAL FLOWCHARTS MUST BE PRODUCED, LOGIFLOW IS SUPERIOR TO COMPLETELY AUTOMATIC FLOWCHARTERS LIKE AUTOFLOW OR FLOWGEN BY ALLOWING THE INTELLIGENT, FUNCTIONAL GROUPING OF STATEMENTS. IT IS MORE CONVENIENT THAN THE MANUAL APPROACH IN THAT IT AUTOMATICALLY GENERATES THE FLOW DIAGRAM (WITH THE EXCEPTION OF LOGICAL BRANCHING LINES WHICH THE USER MUST FILL IN) ACCORDING TO USER SUPPLIED DIRECTIVE.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SIMULATION SOFTWARE DEPT.
CONTACT: J. D. OLIVER, TRW SIMULATION SOFTWARE DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0923
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: LOGOS, TITLE: LOGOS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, TRANSFORMATION, FORMATTING, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN 3
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): ECL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: PROVIDES A COMPLETE VARIABLE INDEX FOR PROGRAMS WRITTEN IN FORTRAN OR SFTRAN. ALSO WILL TRANSLATE LONG VARIABLE NAMES USED IN SFTRAN SYMBOLICS INTO NAMES COMPATIBLE WITH BOTH SFTRAN 3 AND FORTRAN ON THE UNIVAC 1108.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: LOOK, TITLE: LOOK
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, TABLES, DYNAMIC ANALYSIS, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): SVS, OS/VS, OS/MVS, OS/MVT
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLIED DATA RESEARCH
TOOL SUMMARY: LOOK IS A FLEXIBLE AND WIDE-RANGING MEASUREMENT TOOL THAT IS CAPABLE OF PROVIDING AN IMMEDIATE AND ACCURATE APPRAISAL OF TODAY'S DYNAMIC COMPUTER ENVIRONMENTS. LOOK'S INFORMATION CAN HELP AVOID COMMON BOTTLENECKS, THOSE OPERATIONAL CONFLICTS THAT SERIOUSLY IMPEDE A PRODUCTION SCHEDULE. LOOK OFFERS: (1) DYNAMIC SYSTEM CONTROLS THAT PERMIT YOU TO CHANGE A JOB'S DISPATCHING PRIORITY. (2) RESOURCE DISPLAYS THAT SPOTLIGHT WAIT CONDITIONS, THE ALLOCATION OF DEVICES OR DATA SETS, THE CONTENTS OF CONTROL BLOCKS, OR CURRENT CORE USE. (3) PERFORMANCE DISPLAYS THAT CHARACTERIZE CPU USE, I/O ACTIVITY AND PAGING ACTIVITY; OTHER DISPLAYS HELP TO CONTROL THE SRM, THE ASM AND TSO. (4) EXTENDED PERFORMANCE ANALYSIS OPTION THAT ANALYZES AND GRAPHICALLY PRESENTS LONG-TERM DATA TO SPOT TRENDS, TO PREPARE FOR CAREFULLY-CONTROLLED GROWTH, OR TO CONSTRUCT APPROPRIATE SCHEDULES.
DEVELOPER: APPLIED DATA RESEARCH
CONTACT: APPLIED DATA RESEARCH, ROUTE 206 CENTER, CN-8, PRINCETON, NJ, 08540, USA, 609-924-9100
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: MAGLE, TITLE: META ASSEMBLER AND GENERALIZED LINKAGE EDITOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, ASSEMBLY LANGUAGE, TRANSFORMATION, TRANSLATION, CONVERSION, MACHINE OUTPUT, ASSEMBLY LANGUAGE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL PORTABLE: YES, TOOL SIZE: 40,000 STATEMENTS-50% COMMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: MCDONNELL DOUGLAS ASTRONAUTICS CORP.
TOOL SUMMARY: A GENERAL PURPOSE ASSEMBLER PARAMETERIZED ON COMMON BLOCKS WHICH ARE CONFIGURED BY A GENERAL PURPOSE SYNTAX-DIRECTED PARSER; AN ACCOMPANYING LINKER WHICH PROVIDES MACHINE-INDEPENDENT LINKAGE EDITOR SERVICES. IN ESSENCE, A GENERAL PURPOSE TOOL FOR THE CREATION OF PORTABLE CROSS ASSEMBLERS WITH MINIMAL PROGRAMMING EFFORT: TYPICAL ASSEMBLER GENERATION EFFORT IS 1 TO 5 MAN-DAYS. SIDE EFFECT IS MACHINE-READABLE HIGH ORDER ASSEMBLER

SPECIFICATION.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: TRW, MCDONNELL DOUGLAS ASTRONAUTICS CORP.
CONTACT: K. V. SMITH, MDAC, DEPT. 235, AEDO, 5301 BOLSA AVE., HUNTINGTON BCH., CA, 92657, USA, 714-896-4155
T. L. WINSLOW, TRW DSSG, P.O. BOX 2229, WARNER ROBINS, GA, 31099, USA, 912-922-3001
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: MARK IV (TM), TITLE: MARK IV (TM)
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, DATA INPUT, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, GRAPHICS, TABLES,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: INFORMATICS, INC.
TOOL SUMMARY: MARK IV IS A GENERAL PURPOSE SOFTWARE SYSTEM FOR THE DESIGN, IMPLEMENTATION AND OPERATION OF DATA PROCESSING APPLICATIONS. IT IS IN USE AT OVER 1500 COMPUTER SITES IN 44 COUNTRIES. DESIGNED AS AN ADJUNCT OR ALTERNATIVE TO COBOL OR PL/1, IT ENHANCES PROGRAMMER PRODUCTIVITY BY CUTTING DEVELOPMENT AND MAINTENANCE TIME AND COSTS. TYPICAL INSTALLATIONS REPORT USES RANGING FROM COMPLEX FINANCIAL AND OPERATION APPLICATIONS TO ONE-TIME REPORTS. ITS EXTENSIVE USE OF AUTOMATIC FUNCTIONS AND COMPLETE DATA INDEPENDENCE HAVE MADE IT THE STANDARD LANGUAGE IN MANY INSTALLATIONS. THE MARK IV PRODUCT LINE CONSISTS OF THREE MODELS WITH DATA BASE AND ON-LINE OPTIONS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: INFORMATICS, INC.
CONTACT: RON MULLENAUX, INFORMATICS, INC., 21050 VANOWEN ST., CANOGA PARK, CA, 91304, USA, 213-887-9121
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: MED-SYS, TITLE: MULTI-LEVEL EXPRESSION DESIGN SYSTEM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURE3: SUBJECT, VHLL INPUT, REQUIREMENTS LANGUAGE, DESIGN LANGUAGE, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, CONSISTENCY CHECKING, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 30K
COMPUTER (OTHER HARDWARE): DEC PDP-11

OS (OTHER SOFTWARE): RSX-11
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE
TOOL SUMMARY: MED-SYS CONSISTS OF A FAMILY OF LOW COST INTERACTIVE SUBSYSTEMS THAT PROVIDE THE USER WITH COMPREHENSIVE SOFTWARE TOOLS FOR THE INITIAL PHASES IN THE SOFTWARE LIFE CYCLE. THIS APPROACH PROVIDES FOR A COMPARISON OF DESIGN QUALITY USING STRUCTURAL DECOMPOSITION AND OTHER VERIFICATION AND VALIDATION TECHNIQUES. MED-SYS CONSISTS OF THREE SYSTEMS: MEDL-R REQUIREMENTS STATEMENT, MEDL-D DESIGN STRUCTURE, AND MEDL-P PROCEDURAL SPECIFICATION. THE THREE MED-SYS LEVELS MAY BE USED IN AN INTERACTIVE ENVIRONMENT OR AS STAND-ALONE SYSTEMS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: MARTIN MARIETTA AEROSPACE
CONTACT: AMY MUSSER, MARTIN MARIETTA AEROSPACE, P.O. BOX 179, CODE 0422, DENVER, CO, 80201, USA, 303-973-3298
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: MEDL-D, TITLE: MULTI-LEVEL EXPRESSION DESIGN LANGUAGE - DESIGN
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, TABLES, STATIC ANALYSIS, CONSISTENCY CHECKING, MANAGEMENT, DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 790000
IMPLEMENTATION LANGUAGE: FORTRAN IV PLUS
TOOL SIZE: 15,600 SOURCE LINES
COMPUTER (OTHER HARDWARE): DEC VAX-11
OS (OTHER SOFTWARE): VMS
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): CONTACT MARTIN MARIETTA FOR DETAILS
TOOL SUPPORTED: YES, TOOL SUPPORT: MARTIN MARIETTA
TOOL SUMMARY: MEDL-D IS A COMPONENT OF MEDSYS THAT PROVIDES AN INTERACTIVE REQUIREMENTS LANGUAGE. MEDL-D IS AN INTERACTIVE HIGH-LEVEL DESIGN TOOL ORIENTED PRIMARILY TOWARD DEFINING AND CAPTURING SOFTWARE STRUCTURES AND COMPONENT PROCEDURE. MEDL-D IS BASED UPON A CONCEPTUAL FRAMEWORK THAT RECOGNIZES THREE BASIC COMPONENT CATEGORIES CALLED FUNCTIONAL, DATA, AND TEMPORAL OBJECTS. CENTERED ABOUT THESE BASIC DESIGN COMPONENTS ARE MEANS FOR CHARACTERIZING THESE ENTITIES AND THE OBJECTS WITH WHICH THEY ARE ASSOCIATED. IN ORDER TO SUPPORT HIERARCHICAL DEFINITIONS OF DATA STRUCTURES, FUNCTIONAL DECOMPOSITION, AND DISCRETE SCHEDULING, EACH OBJECT IS IMPLICITLY RELATED TO ITSELF. THE CHARACTERISTICS OF FUNCTIONAL OBJECTS ARE REFERRED TO AS PROPERTIES, WHEREAS DATA OBJECTS POSSESS ATTRIBUTES, AND TEMPORAL OBJECTS ARE CHARACTERIZED WITH RATES. THESE DISTINCTIONS ALLOW FOR A LOGICAL SEGREGATION IN THE VOCABULARY OF THE MEDL-D LANGUAGE. WHEN MEDL-D IS

USED IN CONJUNCTION WITH MEDL-R LINKS IN THE DATABASES OCCUR BY WAY OF COMMON ENTITIES.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: MARTIN MARIETTA
CONTACT: MARTIN MARIETTA, PO BOX 179, DENVER, CO, 80201, USA, 303-977-4313
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: MEDL-P, TITLE: MULTI-LEVEL EXPRESSION DESIGN LANGUAGE - PROCEDURE
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, VHLL INPUT, SYSTEM SPECIFICATION, STATIC ANALYSIS, MANAGEMENT, DATA BASE MANAGEMENT, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: CONCEPT, DATE (YYMMDD): 830000
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): CONTACT MARTIN MARIETTA FOR DETAILS
TOOL SUPPORTED: YES, TOOL SUPPORT: MARTIN MARIETTA
TOOL SUMMARY: MEDL-P WILL BE AN INTERACTIVE PROCESSOR WHICH WILL SUPPORT SOFTWARE ENGINEERS IN THEIR EFFORTS TO CAPTURE AND ANALYZE THE DETAILS OF SOFTWARE SYSTEM CONTROL. WHEREAS MEDL-D IS PRIMARILY CONCERNED WITH THE EXPRESSION OF MODULE-LEVEL DESIGN CONCEPTS AND THE DESCRIPTION OF RELATIONSHIPS BETWEEN DESIGN ENTITIES, MEDL-P WILL BE CONCERNED WITH THE DESCRIPTION OF EXECUTION CONTROL. MEDL-P THEN, WILL BE USED AS AN AID IN THE PROCESS OF DETERMINING WHETHER OR NOT THE SYSTEM (BEING DESIGNED) WILL PERFORM WITHIN EXPECTED PARAMETERS.
DEVELOPER: MARTIN MARIETTA
CONTACT: MARTIN MARIETTA, PO BOX 179, DENVER, CO, 80201, USA, 303-977-4313
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: MEDL-R, TITLE: MULTI-LEVEL EXPRESSION DESIGN LANGUAGE - REQUIREMENTS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, REQUIREMENTS SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, TABLES, STATIC ANALYSIS, COMPLETENESS CHECKING, CONSISTENCY CHECKING, MANAGEMENT, DATA BASE MANAGEMENT, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780000
IMPLEMENTATION LANGUAGE: FORTRAN IV PLUS
TOOL SIZE: 10,000 SOURCE LINES
COMPUTER (OTHER HARDWARE): DEC PDP-11, DEC VAX-11
OS (OTHER SOFTWARE): VMS, RSX-11
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): CONTACT MARTIN MARIETTA FOR DETAILS
TOOL SUPPORTED: YES, TOOL SUPPORT: MARTIN MARIETTA
TOOL SUMMARY: MEDL-R IS A COMPONENT OF MEDSYS THAT PROVIDES AN INTERACTIVE REQUIREMENTS LANGUAGE THAT GRADUALLY IMPOSES DISCIPLINE UPON THE PROCESS BY REQUESTING THE USER TO

RESPOND TO A FEW RIGOROUS QUESTIONS ABOUT EACH REQUIREMENT, WHILE STILL ALLOWING A GOOD DEAL OF EXPRESSION IN ENGLISH TEXT. THE LANGUAGE RELIES HEAVILY UPON KEYWORDS TO SIMPLIFY THE CHARACTERIZATIONS OF REQUIREMENTS. EACH OF THE MEDL-R KEYWORDS NOT ONLY PROVIDES AN ASPECT OF CHARACTERIZATION, BUT ALSO IMPLICITLY RELATES REQUIREMENTS WHICH POSSESS COMMON ASPECTS. THIS RESULTS IN A LARGE NUMBER OF IMPLICIT INTERRELATIONSHIPS WHICH PROVIDE THE BASIS FOR SUBSEQUENT ANALYSIS OPERATIONS. UNDER MEDL-R, ALL REQUIREMENT INTERRELATIONSHIPS AND INTERDEPENDENCIES ARE RETAINED, AND OBSOLETE ITEMS, THOUGH ARCHIVED, REMAIN AVAILABLE FOR MANIPULATION AND ANALYSIS BY THE USER. ADDITIONAL MEDL-R FEATURES PROVIDE FOR REQUIREMENT TO DESIGN ITEM TRACEABILITY, SOURCE TO DESTINATION DOCUMENT TRACEABILITY CONSISTENCY AND COMPLETENESS CHECKING, AND DATABASE REPORTING.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: MARTIN MARIETTA
CONTACT: MARTIN MARIETTA, PO BOX 179, DENVER, CO, 80201, USA, 303-977-4313
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: MEDL-X, TITLE: MULTI-LEVEL EXPRESSION DESIGN LANGUAGE - TEXT PROCESSING
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, TRANSFORMATION, EDITING, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, MANAGEMENT, DATA BASE MANAGEMENT,
STAGE OF DEVELOPMENT: DESIGN, DATE (YYMMDD): 820000
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): CONTACT MARTIN MARIETTA FOR DETAILS
TOOL SUPPORTED: YES, TOOL SUPPORT: MARTIN MARIETTA
TOOL SUMMARY: MEDL-X WILL PROVIDE THE USER WITH THE ABILITY TO INTERACTIVELY ASSEMBLE, EDIT, ANALYZE, AND PUBLISH THE SOFTWARE DOCUMENTS WHICH WHEN COMBINED, FORM AN INTEGRAL COMPONENT OF THE DEVELOPMENT PROCESS. MEDL-X WILL NOT BE MERELY ANOTHER TEXT EDITOR OR WORD PROCESSOR INSTALLED ON A MINICOMPUTERS. THE USEFULNESS AND POWER OF MEDL-X ARE DERIVED FROM ITS ABILITY TO EMPLOY THE INFORMATION CONTAINED WITHIN THE FILES ASSOCIATED WITH THE OTHER MEDSYS PROCESSORS IN ADDITION TO ITS OWN DATABASE. ADDITIONALLY, MEDL-X ALLOWS THE TEXT OF STANDARD ("BOILERPLATE") PARAGRAPHS TO BE STORED WITHIN A "BOILERPLATE" FILE FOR SUBSEQUENT INCLUSION INTO A GIVEN DOCUMENT. THE FORMAT AND CONTENT OF A GIVEN SOFTWARE DOCUMENT IS DETERMINED BY THE STANDARDS OF THE CUSTOMER OR THE SOFTWARE DEVELOPER. BY ALLOWING THE "RULES" ASSOCIATED WITH A GIVEN DOCUMENT TO BE STORED WITHIN AN EASILY UPDATED FILE, MEDL-X WILL MAINTAIN ITS ABILITY TO SERVE, IRRESPECTIVE OF THE VOLATILITY WHICH MAY AFFECT A GIVEN SET OF STANDARDS.

DEVELOPER: MARTIN MARIETTA
CONTACT: MARTIN MARIETTA, PO BOX 179, DENVER, CO, 80201, USA, 303-977-4313
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: MEFIA, TITLE: MEFIA
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, MEFIA, TRANSFORMATION, TRANSLATION, CONVERSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, BASIC, PL/1, USER OUTPUT, LISTINGS, STATIC ANALYSIS, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800000
IMPLEMENTATION LANGUAGE: BASIC, PL/1
COMPUTER (OTHER HARDWARE): CII-HB, PLESSEY MICRO I
OS (OTHER SOFTWARE): MULTICS, RSX-11
TOOL SUMMARY: MEFIA IS A PROGRAMMING ENVIRONMENT IN WHICH EMPHASIS IS PLACED ON PROGRAMMING METHODOLOGY IN A STRONGLY TYPED GENERAL LANGUAGE, I.E. MEFIA. TEXT IN MEFIA IS SUBMITTED TO AN ANALYZER, WHICH, IN ADDITION TO PROVIDING LEXICOGRAPHICAL, SYNTACTIC AND STATIC ANALYSES, ALSO PRODUCES A VERSION IN INTERNAL LANGUAGE. THIS VERSION IS IN TURN SUBMITTED TO A DOCUMENTOR FOR PRODUCING DOCUMENTS IN MEFIA AND TO A PL/1 OR BASIC TRANSLATOR TO TRANSLATE THE ORIGINAL PROGRAM INTO ONE OF THESE LANGUAGES.
DOCUMENTATION: TECHNICAL PAPER, DESCRIPTIVE BROCHURE, TECHNICAL REPORT
REFERENCES: [ANDR80], J. ANDRE, J. DUCLOY, P. LAFORGUE, H. MASSIE, AND J. C. RAULT, "CATALOGUE 1980 DE PROTOTYPES DE RECHERCHE EN LOGICIEL", ADI (AGENCE DE L'INFORMATIQUE), CNRS, FRANCE, 801100
DEVELOPER: LABORATOIRE IMAG
CONTACT: SCHOLL, LABORATOIRE IMAG, BP 53 X, GRENOBLE, CEDEX, 38 041, FRANCE,
INFORMATION SOURCE: ADI/CNRS CATALOGUE 1980

ACRONYM: MEMORY MNG LIB, TITLE: MEMORY MANAGERS LIBRARY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, OPTIMIZATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: FORTRAN PROGRAMMERS ARE FORCED, BY THE VERY DEFINITION OF THE FORTRAN LANGUAGE, TO ALLOCATE MEMORY SPACE FOR THEIR DATA IN A WASTEFUL MANNER. MOREOVER, MOST FORTRAN IMPLEMENTATIONS ALLOCATE TO A PROGRAM AN AMOUNT OF MEMORY EQUAL TO THE MAXIMUM THAT MAY EVER BE USED BY THE PROGRAM, RATHER THAN THE AMOUNT NEEDED FOR EACH SPECIFIC RUN. THE PURPOSE OF A DYNAMIC MEMORY MANAGER IS TO AUTOMATICALLY MANAGE MEMORY SO AS TO ALLOCATE TO A PROGRAM ONLY THE AMOUNT OF MEMORY SPACE IT NEEDS FOR ITS DATA FOR A GIVEN EXECUTION, AND NO MORE. LARGE MEMORY SAVINGS AND EMBARRASSING OVERFLOWS ARE MINIMIZED. SOFTOOL OFFERS A FAMILY OF DYNAMIC MEMORY MANAGERS. EACH MEMBER OF THE FAMILY EMPLOYS A DIFFERENT STRATEGY FOR THE MANAGEMENT OF MEMORY SPACE. THE STRATEGIES VARY FROM THE VERY SIMPLE TO THE VERY SOPHISTICATED, INCLUDING ONE THAT IMPLEMENTS A VIRTUAL MEMORY FACILITY AND ALLOWS THE PROGRAMMER TO DEFINE THE VIRTUAL ARCHITECTURE (E.G., PAGE SIZE, VIRTUAL SPACE).
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: MENTOR, TITLE: MENTOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, TRANSFORMATION, RESTRUCTURING, MACHINE OUTPUT, SOURCE CODE OUTPUT, DATA OUTPUT, USER OUTPUT, TABLES, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20, DEC VAX-11, CII-HB
OS (OTHER SOFTWARE): MULTICS, VMS, SIRIS
TOOL SUMMARY: MENTOR IS AN INTERACTIVE COMMAND LANGUAGE THAT IS USED FOR MANIPULATING PIECES OF CODE AND RELATED INFORMATION SUCH AS COMMENTS, ASSERTIONS, CROSS REFERENCE TABLES, ETC. THIS DATA IS REPRESENTED IN THE FORM OF LABLED TREES. THE COMMAND LANGUAGE MENTOR HAS CONTROL STRUCTURES AND MANIPULATION TOOLS (DESTRUCTION OR INSERTION OF SUB-TREES, ANALYZERS, DECOMPILERS). THE APPLICATIONS OF MENTOR ARE: (1) ON THE SPOT PROGRAM MAINTENANCE (IN THIS CASE MENTOR ACTS AS AN INTELLIGENT INTERACTIVE TEXT EDITOR). (2) DEVELOPMENT OF A PROGRAMMING ENVIRONMENT: NORMALIZATION OF PROGRAM WRITING AND PRESENTATION, AIDED DOCUMENTATION, PROGRAM DEBUGGING, PROGRAM CONVERSION, PROGRAM TRANSPORT, ETC.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER
REFERENCES: [ANDR80], J. ANDRE, J. DUCLOY, P. LAFORGUE, H. MASSIE, AND J. C. RAULT, "CATALOGUE 1980 DE PROTOTYPES DE RECHERCHE EN LOGICIEL", ADI (AGENCE DE L'INFORMATIQUE), CNRS, FRANCE, 801100
DEVELOPER: INRIA
CONTACT: B. LANG, INRIA, DOMAINE DE VOLUCEAU-ROCQUENCOURT, BP 105, LE CHESNAY, CEDEX, 78153, FRANCE, (3) 954.90.20
INFORMATION SOURCE: ADI/CNRS CATALOGUE 1980

ACRONYM: METRAN, TITLE: META TRANSLATOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES, TOOL SIZE: WORDS PDP 10, 32+8
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUMMARY: THE META TRANSLATOR IS A GENERAL PURPOSE TOOL, WHICH PROVIDES THE USER WITH AUTOMATED TECHNIQUES FOR THE GENERATION OF LANGUAGE SPECIFIC TRANSLATORS. AN ASSOCIATED META-LANGUAGE (METRAN) PROVIDES A DESCRIPTIVE MEDIUM FOR THE USER TO DESCRIBE THE SYNTAX OF THE SOURCE LANGUAGE IN A MODIFIED BNF FORM AND TO SPECIFY TRANSLATIONAL AS WELL AS CODE GENERATIVE SEMANTICS. TRANSLATIONAL DATA STRUCTURES ARE DEFINABLE AT THE METRAN LEVEL WHICH ALLOW THE USER TO DEFINE AND SUBSEQUENTLY EXPLOIT HASH CODED SYMBOL TABLES (WITH ATTRIBUTES); PUSH DOWN-POP UP (FIFO) STACKS LINKED DYNAMIC LISTS OF DATA STRUCTURES; SYNTACTIC PARSING PRIMITIVES ARE PROVIDED SO THAT THE USER NEED NOT BE CONCERNED WITH AN AD HOC CREATION OF A PARSING ALGORITHM. THE BNF-LIKE DESCRIPTION OF THE LANGUAGE IS MAPPED INTO A FORTRAN PARSING PROGRAM WHICH UTILIZES THESE PARSING PRIMITIVES TO PRODUCE A TOP-DOWN RECURSIVE DESCENT PARSER FOR THE LANGUAGE WITH EMBEDDED LINKAGES TO SYSTEM SEMANTIC PROCEDURES OR THE DESIRED USER DEFINED SEMANTIC PROCEDURES.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: MCDONNELL DOUGLAS ASTRONAUTICS CORP.
CONTACT: K. V. SMITH, MDAC, DEPT. 235, AEDO, 5301 BOLSA AVE., HUNTINGTON BCH., CA, 92657, USA, 714-896-4155
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: MODULE ORDERER, TITLE: MODULE ORDERER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, OBJECT CODE, TRANSFORMATION, FORMATTING, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): DATA GENERAL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: IN THE CASE OF DATA GENERAL AOS SYSTEMS, THE INTERPLAY BETWEEN THE LIBRARY AND THE BINDER IS OF CRUCIAL IMPORTANCE TO SUCCESSFUL SYSTEMS UTILIZATION. THE BINDER REQUIRES THAT ALL MODULES PRESENTED TO IT FOR BINDING, WHICH ORIGINATE IN AN UNSHARED LIBRARY, BE IN FORWARD ORDERING. THIS REQUIREMENT PLACES A CLERICAL BURDEN ON THE USER WHICH, IN MANY INSTANCES, MAKES BINDING WITH USER CREATED LIBRARIES UNNECESSARILY TEDIOUS AND TIME CONSUMING. THE MODULE ORDERER IS A SOFTWARE PRODUCT THAT ACCEPTS AS INPUT A COLLECTION OF OBJECT MODULES AND AUTOMATICALLY ORGANIZES AND STORES THEM IN A LIBRARY IN FORWARD ORDERING. THE TOOL IS VERY EASY TO USE. THE AUTOMATIC FORWARD ORDERING OF MODULES IS AN IMPORTANT AND BENEFICIAL ENHANCEMENT THAT RELIEVES THE USER OF DG SYSTEMS FROM MUCH CLERICAL AND ERROR-PRONE WORK. THIS PRODUCT IS A MEMBER OF

A INTEGRATED SET OF TOOLS MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: MONITOR, TITLE: MONITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: RUN TIME ANALYSIS, SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TUNING, TIMING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: RATFOR
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES
TOOL SUMMARY: COLLECTS AND PRINTS MODULE EXECUTION COUNTS, AND TIMES: CENTRAL PROCESSOR PERIPHERAL PROCESSOR, INPUT/OUTPUT, AND CLOCK, FOR EACH MODULE MONITORED 'MONITOR' IS CALLED AT THE ENTRY AND EXIT OF EACH MODULE; THE ARGUMENT IN EACH CASE IS THE NAME OF THE MODULE. THE TIMING TABLE IS PRINTABLE AT ANY TIME BY A CALL TO THE 'PRINT' MODULE. INSTRUMENTATION OF THE MONITORED SOURCE CODE IS MOST EASILY DONE WITH A TOOL SUCH AS 'INSERT.'
DEVELOPER: NSRDC
CONTACT: PETER N. ROTH, NSRDC, STRUCTURES DEPARTMENT, BETHESDA, MD, 20084, USA, 202-227-1851
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: MPS, TITLE: MANUSCRIPT PREPARATION SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, TRANSFORMATION, EDITING, FORMATTING, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COMPASS
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
TOOL SUMMARY: THE MANUSCRIPT PREPARATION SYSTEM EXTENDS THE POWER OF A COMPUTER SYSTEM TO PEOPLE INVOLVED IN PRODUCING PRINTED MATTER. TO TAKE ADVANTAGE OF THIS SYSTEM THE USER NEED NOT BE FAMILIAR WITH COMPUTER SYSTEMS, BUT MAY SIMPLY BE EXPERIENCED IN THE PREPARATION OF MANUSCRIPTS. WITH MPS, TEXT IS ENTERED TO A COMPUTER FILE FROM A TERMINAL IN A MANNER MUCH LIKE THAT USED WITH AN ORDINARY TYPEWRITER. SIMPLE INSTRUCTIONS ARE USED TO PRINT A DOCUMENT OR TO MODIFY IT. GRAMMATICAL FORMATTING COMMANDS ARE ADDED WITH THE TEXT TO INDICATE PARAGRAPHS, HEADINGS AND PAGE NUMBERING INSTRUCTIONS, AND THESE NOTES COME IN A FORM CLOSELY RESEMBLING NORMAL MANUSCRIPT EDITING INSTRUCTIONS. ONCE TEXT HAS BEEN ENTERED, MODIFICATIONS MAY BE EASILY MADE AND THE ENTIRE DOCUMENT RECREATED BY THE COMPUTER IN ITS NEW FORM, COMPLETE WITH NEW PAGE NUMBERS, TABLE OF CONTENTS AND MANUSCRIPT FORMAT.

DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, COMPUTER SYSTEMS DEPARTMENT
CONTACT: J. R. DEALY, TRW, COMPUTER SYSTEMS DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0833
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: MSEF, TITLE: MICROPROCESSOR SOFTWARE ENGINEERING FACILITY
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, CODE INPUT, C, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, COMPILATION, EDITING, MACHINE OUTPUT, OBJECT CODE OUTPUT, INTERMEDIATE CODE, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON, MANAGEMENT, VERSION CONTROL, TEST DATA MANAGEMENT, CHANGE CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: C
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): UNIX
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LEASE
TOOL SUMMARY: THE MICROPROCESSOR SOFTWARE ENGINEERING FACILITY (MSEF) IS AN INTEGRATED SET OF SOFTWARE TOOLS TO SUPPORT THE DEVELOPMENT AND MAINTENANCE OF MICRO-COMPUTER SOFTWARE. THE MSEF IS HOSTED ON A PDP-11 COMPUTER UNDER THE UNIX OPERATING SYSTEM BUT CAN SUPPORT THE PRODUCTION OF SOFTWARE FOR MANY DIFFERENT MICROCOMPUTERS. THE MSEF CHANGE CONTROL LIBRARY PROMOTES DEFINING, UPDATING, AND INTEGRATING PARTS OF A SOFTWARE CONFIGURATION, ISOLATION OF USER WORK ENVIRONMENTS, AND VERSION CONTROL. THE MSEF SUPPORTS THE ORGANIZED TESTING OF SOFTWARE COMPONENTS BY ASSOCIATING TEST SCENARIOS AND TEST RESULTS WITH THE COMPONENTS TO BE TESTED. THE MSEF ALSO PROVIDES AUTOMATIC CHANGE LOGGING WITH A CONFIGURATION AUDIT TRAIL. A MACRO ASSEMBLER SUPPORTING STRUCTURED LANGUAGE CONSTRUCTS AND A COMPILER FOR ""C"" ARE INCLUDED IN THE TOOL COMPLEMENT.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER, MAINTENANCE MANUAL, TEST PLAN
REFERENCES: [EANE79], EANES, HITCHON, THALL, AND BRACKETT, "AN ENVIRONMENT FOR PRODUCING WELL-ENGINEERED MICROCOMPUTER SOFT.", PROCEEDINGS OF 4TH ICSE, PP 386-398, 790900
DEVELOPER: SOFTECH
CONTACT: VIC VOYDOCK, SOFTECH, INC., 460 TOTTEN POND ROAD, WALTHAM, MA, 02154, USA, 617-890-6900
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS, TOOL FAIR

ACRONYM: MSL, TITLE: MODULE SPECIFICATION LANGUAGE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS

FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, FORMATTING, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS
TOOL SUMMARY: THE MSL IS A VERY HIGH LEVEL LANGUAGE FOR SPECIFYING A DESCRIPTION OF THE ALGORITHMS BY WHICH A SOFTWARE MODULE IS TO ACCOMPLISH ITS PURPOSE. THE DESCRIPTION IS DIRECTED AT WHAT THE ALGORITHM DOES AND NOT ON HOW IT IS TO BE IMPLEMENTED. THE USE OF MSL IS TO DEVELOP A PRECISE AND COMPLETE STATEMENT OF THE SOFTWARE MODULE DESIGN TO ENABLE A PROGRAMMER TO IMPLEMENT IT IN DIFFERENT COMPUTING ENVIRONMENTS WITH DIFFERENT PROGRAMMING LANGUAGES. MSL INPUTS ARE DIVIDED INTO TWO PARTS, AN ACTION PART WHICH DESCRIBES WHAT ACTION THE SOFTWARE MODULE IS TO PERFORM AND A DATA SECTION WHICH DESCRIBES THE DATA THE SOFTWARE MODULE IS TO USE AND WHAT VIEW OF THAT DATA THE MODULE HAS. THE ACTION DESCRIPTION IS BASED ON THE USE OF STRUCTURED KEYWORDS OF IF, ELSE, ELSEIF, FOREACH, WHILE, LOOP, BREAK, AND NEXT. THE MSL DESIGN ANALYZER PRODUCES A FORMATTED LISTING OF THE MODULE SPECIFICATION.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
[HERS78], E.A. HERSHEY, Y. YAMAMOTO, B. WATERMAN, "THE SOFTWARE DEVELOPMENT FACILITY", ISDOS REF. 7800-0214-0, 780900
DEVELOPER: UNIVERSITY OF MICHIGAN
CONTACT: E. HERSHEY, UNIVERSITY OF MICHIGAN, ANN ARBOR, MI, 48109, USA, 313-763-2238
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: MTR, TITLE: MODULAR TREE REPRESENTATION
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN LANGUAGE, PDL, USER OUTPUT, GRAPHICS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS
TOOL SUPPORTED: NO
TOOL SUMMARY: THIS TOOL PRODUCES DIRECTED GRAPHS OF CALLS WITHIN A DESIGN OR AN EXECUTABLE PROGRAM IN ORDER TO ILLUSTRATE THE RELATIONSHIPS BETWEEN VARIOUS ELEMENTS OF A SOFTWARE SYSTEM. THE MTR PROCESSOR CAN BE USED TO PROCESS GRAPHS GENERATED FROM PROGRAM DESIGN LANGUAGE DESIGNS (PDL), HIGH ORDER LANGUAGE SOURCE CODE, LOAD MODULES, ETC. EXPERIMENTAL RESULTS TO DATE HAVE BEEN POSITIVE.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330

[DEBA78], G. DEBALBINE, "MTR - A TOOL FOR DISPLAYING THE GLOBAL STRUCTURE OF SOFTWARE SYSTEMS", PROCEEDINGS OF NCC, 780000
DEVELOPER: CAINE, FARBER GORDON, INC.
CONTACT: STEVE CAINE, CAINE, FARBER GORDON, INC., 750 EAST GREEN STREET, PASADENA, CA, 91101, USA, 213-449-3070
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: N5500, TITLE: PROJECT MANAGEMENT SYSTEMS - N5500
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL ANSI
TOOL PORTABLE: YES, TOOL SIZE: CORE: 120K-IBM
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: PROJECT MANAGEMENT SYSTEMS-N5500 IS A PROJECT PLANNING AND CONTROL SYSTEM THAT INTERRELATES TASKS AND PROJECTS THROUGH A PRECEDENCE NETWORKING SYSTEM. THIS ENABLES THE SYSTEM TO CONSTANTLY MONITOR THE IMPACT OF IN-PROCESS SLIPPAGES AND TO PLAN CHANGES FOR BOTH PLANNED AND IN-PROCESS PROJECTS. THE PROGRAM DETERMINES PROJECT TRENDS AND ROUTINELY PREDICTS ALL COMPLETION DATES AND EVENTUAL COSTS. PLANNING IS ACCOMPLISHED BY SIMULATING A TRIAL PLAN AND VIEWING THE IMPACT OF EACH TRIAL ON THE IN-PROCESS RESOURCE LOAD. THE SYSTEM USES AN UPDATABLE, TRANSACTION- LOADED DICTIONARY THAT ALLOWS INTERFACES WITH ANY SYSTEM DEVELOPMENT LIFE CYCLE METHODOLOGY AND STANDARD. IT ALSO CONTAINS A TRANSACTION HISTORY FOR IN-DEPTH ANALYSIS OF EACH PERSON'S PERFORMANCE BY FUNCTION, TASK, AND PROJECT, AND OFFERS TOTAL REPORTING CAPABILITIES. BY USING THIS DATA AND SIMULATING VARIOUS CONDITIONS, THE USER OF PROJECT MANAGEMENT SYSTEMS CAN BUILD A DATA BASE FOR ESTIMATING GUIDELINES AND GOALS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: NICHELS AND COMPANY, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: N-SQUARED, TITLE: N-SQUARED CHART GENERATION PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, MILESTONE CHARTS, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE N-SQUARED CHART GENERATION PROGRAM IS A GRAPHIC DISPLAY TOOL FOR THE CREATION OF PROJECT AND TASK INTERFACE CHARTS. IT WAS DEVELOPED FOR USE AS A PROPOSAL AND PROJECT MANAGEMENT AID TO ASSIST IN THE PORTRAYAL OF

SYSTEM ACTIVITY INTERACTION IN A CLEAR, EASY TO READ AND EASY TO DESIGN FORMAT. SYSTEM ACTIVITIES ARE REPRESENTED AS TITLED BOXES ARRANGED DIAGONALLY IN A SINGLE LINE ON A CHART. INTERFACES BETWEEN ANY TWO ACTIVITIES ON THIS DIAGONAL ARE REPRESENTED AS NUMBERED CIRCLES PLACED IN GRID FORMAT ADJACENT TO THE DIAGONAL. GROUPS OF BOXES MAY BE IDENTIFIED AROUND WHICH HEAVY EMPHASIS LINES WILL BE DRAWN AND TO WHICH A GROUP TITLE MAY BE GIVEN. CHARTS ARE OUTPUT ON EITHER CALCOMP OR VERSATEC PLOTTING DEVICES. INPUT IS DESIGNED TO BE SIMPLE AND FLEXIBLE TO ALLOW FOR EASY CHART CREATION AND MODIFICATION. EACH BOX IS ASSOCIATED WITH A UNIQUE ALPHANUMERIC CHARACTER IN THE INPUT STREAM, AND INTERFACES BETWEEN BOXES UTILIZE THESE IDENTIFIERS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: NASA-VATS, TITLE: HAL/S VERIFICATION AND TESTING SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, HAL/S, USER OUTPUT, DIAGNOSTICS, LISTINGS, DYNAMIC ANALYSIS, SYMBOLIC EXECUTION,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: PASCAL
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
OS (OTHER SOFTWARE): NOS
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUMMARY: AN INTEGRATED, USER - COOPERATIVE CODE VERIFICATION AND TESTING SYSTEM. THE SYSTEM IS DESIGNED TO USE STATIC ANALYSIS TOOLS, SYMBOLIC EXECUTION, AND DYNAMIC TEST ANALYSIS TOOLS FOR TESTING OF RESEARCH-ORIENTED, CONCURRENT PROCESS AVIONICS SOFTWARE. THE SYSTEM TOOLS ARE DESIGNED TO BE HIGHLY-MODULAR, INTEGRATED, COOPERATIVE, AND USER- CONTROLLED. THE SYSTEM IS CURRENTLY DESIGNED FOR ANALYSIS OF FLIGHT SOFTWARE WRITTEN IN THE HAL/S LANGUAGE.
DOCUMENTATION: USER'S MANUAL, DEVELOPMENT SPECIFICATION
DEVELOPER: NASA LANGLEY RESEARCH CENTER
CONTACT: E. H. SENN, NASA LANGLEY RESEARCH CENTER, MAIL STOP 125A, HAMPTON, VA, 23665, USA, 804-827-3086
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: NETWORK PLANNER, TITLE: NETWORK PLANNER
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS

NETWORK PLANNER

FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, USER OUTPUT, GRAPHICS, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800100
IMPLEMENTATION LANGUAGE: FORTRAN IV
TOOL SIZE: 500 STATEMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THE NETWORK PLANNER IS A MODULE FOR EVALUATING PLANS OF SOFTWARE PROJECTS FOR EFFICIENCY AND COST. IT USES A CPM APPROACH TO EVALUATE ALTERNATIVE PLANS AND GIVES A GRAPHICAL REPRESENTATION OF THE PLANS.
DOCUMENTATION: TECHNICAL DOCUMENTATION (10), USER DOCUMENTATION (5)
REFERENCES: [PAYN75], A.J. PAYNE, "DESIGN OF DISTRIBUTED COMPUTERS", 9TH NZ MATHEMATICS COLLOQUIM, 750000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: NODAL, TITLE: NODE DETERMINATION AND ANALYSIS PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION, MANAGEMENT, TEST DATA MANAGEMENT, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780600
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
COMPUTER (OTHER HARDWARE): IBM 360/370, DECSYSTEM-10/20, CDC 6X00/7X00, UNIVAC 11XX
TOOL AVAILABLE: YES
TOOL SUMMARY: NODAL IS DESIGNED TO AID THE USER IN EXECUTING ALL THE SOURCE CODE AND ALL THE BRANCHES IN TESTING A FORTRAN PROGRAM. IT USES THE TECHNIQUE OF ANALYZING THE CODE OF AN EXISTING PROGRAM AND INSTRUMENTING OR ADDING CODE THAT WILL RECORD THE EXECUTION OF THE PROGRAM'S NODES. A NODE IS DEFINED AS AN ENTRY POINT TO THE SMALLEST SET OF CONSECUTIVELY EXECUTABLE STATEMENTS TO WHICH CONTROL CAN BE GIVEN DURING PROGRAM EXECUTION. AT THE NORMAL END OF AN EXECUTION OF THE USER'S INSTRUMENTED PROGRAM, NODAL WILL OBTAIN CONTROL AND PROVIDE INFORMATION ABOUT THE FREQUENCY OF EXECUTION OF EACH NODE. ALSO PROVIDED IS A TEST EFFECTIVENESS RATIO (NODES EXECUTED/NODES IDENTIFIED) FOR EACH ROUTINE, A TEST EFFECTIVENESS RATIO FOR THE ENTIRE PROGRAM, AND A LIST OF THE PROGRAM NODES NOT EXECUTED. NODAL INCREASES ON RUN TIME APPROXIMATELY 8% AND CORE REQUIREMENTS 25%.

NODAL

DOCUMENTATION: TECHNICAL DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: NUMBER, TITLE: FORTRAN STATEMENT RENUMBERING PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 770000
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/MVT
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE THROUGH THE FEDERAL SOFTWARE EXCHANGE CENTER, FSWEC-77/0203
TOOL SUMMARY: NUMBER IS A FORTRAN PROGRAM FOR RENUMBERING THE STATEMENT NUMBERS OF A FORTRAN PROGRAM INTO A SEQUENTIAL ORDER, USING AN INCREMENT OF TEN. AN OPTION IS PROVIDED FOR VISUAL VERIFICATION OF THE RESULTS. FORMAT STATEMENTS ARE NUMBERED WITH THE OTHER STATEMENTS, NOT SEPARATELY AS IN SOME PROGRAMS.
REFERENCES: [FSEC80], GENERAL SERVICES ADMINISTRATION/NATIONAL TECHNICAL INFORMATION SERVICE, "FEDERAL SOFTWARE EXCHANGE CATALOG", GSA/ADTS/C-80/1, PB80-904001, 800100
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, 703-756-2610
INFORMATION SOURCE: FEDERAL SOFT EXCHANGE CATALOG

ACRONYM: NUMBER/DEC, TITLE: NUMBER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): RSX-11
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS

TOOL SUMMARY: NUMBER IS A PROGRAMMING TOOL FOR COBOL USERS. ITS PRIMARY PURPOSES ARE TO DOCUMENT THE LOCATION OF PARAGRAPHS THROUGHOUT A COBOL PROGRAM AND TO REFORMAT THE PROGRAM BY ALIGNING CERTAIN DATA ITEMS. SINCE FORMAT IS HIGHLY STRESSED IN STRUCTURED PROGRAMMING, IT IS IMPORTANT TO BE ABLE TO EASILY MAINTAIN THE FORMATTING ORIGINALLY DESIGNED INTO A PROGRAM. NUMBER AIDS IN THE PROCESS BY MAINTAINING THE ALIGNMENT OF PIC AND VALUE CLAUSES WHENEVER POSSIBLE AND BY THE INSERTION OF BLANK LINES BETWEEN MARGIN A ITEMS; E.G., GROUP ITEM FIELDS, SECTIONS AND PARAGRAPHS. OPTIONALLY, THE RECEIVING FIELDS OF MOVE STATEMENTS CAN ALSO BE ALIGNED IN THE PROCEDURE DIVISION.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: DIGITAL EQUIP. CORP., ASK(MLS-2/M45)-A0100, 146 MAIN ST., MAYNARD MA.
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: ONLINE ASSIST, TITLE: A USER INTERFACE FOR ONLINE ASSISTANCE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, MANAGEMENT, DOCUMENTATION MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, C
TOOL PORTABLE: YES
COMPUTER (OTHER HARDWARE): DEC PDP-11, UNIVAC 11XX
OS (OTHER SOFTWARE): EXEC 8, UNIX
TOOL AVAILABLE: YES
TOOL SUMMARY: FROM THE USER'S POINT OF VIEW, SPECIAL ASSISTANCE FUNCTIONS ARE ALWAYS AVAILABLE TO REQUEST INFORMATION OR TO OBTAIN SUCCESSIVELY MORE DETAILED EXPLANATIONS OF A DISPLAYED MESSAGE. THESE REQUESTS ARE ENTERED THROUGH FUNCTION KEYS OR AS SPECIAL CODES AND DO NOT AFFECT THE INTERPRETATION OF OTHER INPUT. DIFFERENT TYPES OF AIDS MAY BE REQUESTED. FOR INSTANCE, A USER WHO MAKES AN ERROR WHEN RESPONDING TO A SYSTEM PROMPT CAN OBTAIN FURTHER EXPLANATION OF THE ORIGINAL QUESTION, FURTHER EXPLANATION OF THE ERROR MESSAGE, OR EXAMPLES OF CORRECT RESPONSES. FROM THE PROGRAMMER'S POINT OF VIEW, EACH MULTI-LEVEL MESSAGE (CALLED A SCRIPT) IS WRITTEN AS A SEPARATE FILE. IN BOTH IMPLEMENTATIONS, ALL THE SCRIPTS REQUIRED FOR A GIVEN APPLICATION ARE GROUPED TOGETHER IN A SINGLE FILE CALLED THE MESSAGE FILE, ALTHOUGH SINGLE SCRIPTS CAN STILL BE ACCESSED INDEPENDENTLY.
DOCUMENTATION: USERS GUIDE
REFERENCES: [RELL81], RELLES, N. AND L. A. PRICE, "A USER INTERFACE FOR ONLINE ASSISTANCE", 5TH INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING, 810000

CONTACT: NATHAN RELLES, SPERRY UNIVAC, MS 2G3, PO BOX 500, BLUE BELL, PA, 19424, USA, 215-542-2387
INFORMATION SOURCE: TOOL FAIR

ACRONYM: OPTIMIZER II, TITLE: OPTIMIZER II
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, ANSI COBOL, TRANSFORMATION, OPTIMIZATION, MACHINE OUTPUT, OBJECT CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY ALC
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: OPTIMIZER II AUTOMATICALLY IMPROVES THE EFFICIENCY OF THE OBJECT CODE GENERATED BY THE IBM ANS COBOL COMPILERS. ITS OBJECT LEVEL ANALYSIS PROVIDES SAVINGS IN MAIN PROCESSOR TIME AND MAIN STORAGE REQUIREMENTS WHICH CANNOT BE OBTAINED AT THE SOURCE- CODE LEVEL. SAVINGS OF UP TO 25% IN EXECUTION TIME AND 20-30% IN MEMORY REQUIREMENTS MAY BE ACHIEVED.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: CAPEX CORPORATION
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG, RADC-TR-80-13, INTERIM REPORT

ACRONYM: OPTIMUS, TITLE: OPTIMUS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, TRANSFORMATION, OPTIMIZATION, MACHINE OUTPUT, OBJECT CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL SIZE: CORE: 600-DOS,2K-DOS/VS
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): DOS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE
TOOL SUMMARY: OPTIMUS IS AN AUTOMATIC THROUGHPUT OPTIMIZER THAT PROVIDES USERS THE FLEXIBILITY TO RUN JOBS IN ANY PARTITION WITHOUT CONCERN FOR PARTITION LOCKOUTS OR SYSTEM DEGRADATION. OPTIMUS ANALYZES MULTI- PROGRAMMING ACTIVITY AT SPECIFIED INTERVALS AND DYNAMICALLY ADJUSTS PARTITION PRIORITIES, GIVING I/O-BOUND JOBS HIGHER PRIORITY THAN CPU-BOUND JOBS. OPTIMUS DOES NOT REQUIRE ANY SUPERVISOR OR IBM SOFTWARE MODIFICATIONS. IT IS RELEASE-INDEPENDENT AND OPERATES WITH POWER AND POWER/VS AS WELL AS THE VENDOR'S ASAP SPOOLING SYSTEM.

DOCUMENTATION: USER'S MANUAL
DEVELOPER: UNIVERSAL SOFTWARE, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: OSCYBR, TITLE: IBM TO CDC FORTRAN CONVERSION AID
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, IBM FORTRAN, TRANSFORMATION, TRANSLATION, CONVERSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, CDC FORTRAN,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 770000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: 2000 STATEMENTS
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/MVS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM FEDERAL SOFTWARE EXCHANGE CENTER, FSWEC-77/0374
TOOL SUMMARY: OSCYBR IS AN AID TO CONVERTING FORTRAN PROGRAMS FROM IBM OS SYSTEMS TO CDC CYBER SYSTEMS. OSCYBR PARTIALLY CONVERTS FORTRAN PROGRAMS BY: CONVERTING EBCDIC TO BCD, REPLACING DOUBLE PRECISION CONSTANTS, VARIABLES AND FUNCTIONS WITH SINGLE PRECISION ONES, DELETING AND FLAGGING ALL BYTE-LENGTH SPECIFICATIONS, CONVERTING IBM ENDFILE TESTS TO CDC ONES, SEQUENCING ROUTINES IN CDC UPDATE/MODIFY FORMAT, INSERTING DECK CARDS.
REFERENCES: [FSEC80], GENERAL SERVICES ADMINISTRATION/NATIONAL TECHNICAL INFORMATION SERVICE, "FEDERAL SOFTWARE EXCHANGE CATALOG", GSA/ADTS/C-80/1, PB80-904001, 800100
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, 703-756-2610
INFORMATION SOURCE: FEDERAL SOFT EXCHANGE CATALOG

ACRONYM: PAC II, TITLE: PAC II
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370, BURROUGHS B3500, UNIVAC 11XX
TOOL SUMMARY: PAC II IS DESIGNED TO AID IN THE MANAGEMENT OF PROJECTS OF ALL KINDS BY PROVIDING FOR THE BUDGETING, PLANNING, MONITORING, AND COSTING OF ALL ASPECTS OF PROJECT MANAGEMENT. IT CONSISTS OF NINE COMPUTER PROGRAMS THAT OPERATE ON A SEQUENTIALLY ORGANIZED DATA BASE. RESOURCE SCHEDULING CAN BE ON PRIORITIES, AVAILABILITY, AND/OR NETWORK DEPENDENCIES. SINGLE OR MULTIPLE PROJECTS CAN BE SCHEDULED AS WELL AS INDIVIDUAL RESOURCES, GROUP RESOURCES, OR UNLIMITED RESOURCES. PROJECTS CAN BE OF ALL TYPES AND INCLUDE MAINTENANCE OR NEW DEVELOPMENTS. PAC II FUNCTIONS ON PARAMETERS SPECIFIED BY THE USER. THE USER CAN SELECT

FEATURES, OUTPUT AND RUN FREQUENCY AT RUN TIME.
DOCUMENTATION: USER'S MANUAL, IMPLEMENTATION GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: INTERNATIONAL SYSTEMS, INC.
CONTACT: INTERNATIONAL SYSTEMS, INC., 150 ALLENDALE ROAD, KING OF PRUSSIO, PA, 19406, USA, 215-265-1500
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PACE, TITLE: PRODUCE ASSURANCE CONFIDENCE EVALUATION
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00, UNIVAC 11XX
TOOL SUMMARY: PACE IS A UNIQUE QUALITY ASSURANCE TOOL TO AID PROGRAM DEVELOPERS AND TESTERS IN THE PLANNING, EXECUTION, AND EVALUATION OF BOTH ROUTINE LEVEL AND PROGRAM LEVEL TESTS. THE OBJECT OF PACE IS TO QUANTITATIVELY ASSESS HOW THOROUGHLY AND RIGOROUSLY A PROGRAM HAS BEEN TESTED. PACE IS THE TOOL THAT IS USED TO ASSURE THAT EVERY LOGICAL AND ARITHMETIC INSTRUCTION OF EVERY BRANCH BE SUBJECTED TO AN EXECUTION TEST. VERSIONS OF THE PACE SYSTEM HAVE BEEN DEVELOPED BY TRW WHICH PROVIDE SPECIAL OPTIONS DICTATED BY A GIVEN USER. THESE PACE VERSIONS ARE NODAL, ANODE, AND AVS/TDEM. A HIGHLY MODULAR DESIGN APPROACH WAS TAKEN TO REDUCE AND ISOLATE HARDWARE/SOFTWARE DEPENDENT CHARACTERISTICS AND ASSURE EASY IMPLEMENTATION ON A VARIETY OF COMPUTERS. INPUT TO PACE CONSISTS OF THE USER'S FORTRAN SOURCE CODE, AND A PACE OPTION CARE. OUTPUT FROM PACE CAN BE VARIED BY USING THE OPTION CARD, BUT NOMINALLY INCLUDES: (1) A LISTING OF THE USER'S SOURCE CODE ANNOTATED WITH SEGMENT NUMBERS. (2) A PROGRAM STRUCTURE SUMMARY.
DOCUMENTATION: USER'S MANUAL, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
[DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG, RADC-TR-80-13, INTERIM REPORT

ACRONYM: PACE-C, TITLE: PRODUCT ASSURANCE CONFIDENCE EVALUATOR-COMPASS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COMPASS, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COMPASS, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COMPASS
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: PACE-C IS SIMILAR TO PACE IN AIDING PROGRAM DEVELOPERS AND TESTERS IN THE PLANNING, EXECUTION, AND EVALUATION OF BOTH ROUTINE LEVEL AND PROGRAM LEVEL TESTS. PACE-C QUANTITATIVELY ASSESSES HOW THOROUGHLY AND RIGOROUSLY ONE OR MORE COMPASS ROUTINES HAVE BEEN TESTED. 1) THE PACE-C EXTENDED SIMULATOR - THE SAS SIMULATOR, WHICH SIMULATES THE CDC 7600 CPU, IS UPDATED TO CREATE THE EXTENDED SIMULATOR. THERE ARE TWO CONFIGURATIONS OF THE EXTENDED SIMULATOR; ONE FOR UNIT LEVEL TESTS AND THE OTHER FOR PROGRAM LEVEL TESTS. THE EXTENDED SIMULATOR CREATES A SEGMENT TABLE WHILE SIMULATING THE USER' PROGRAM. THE SEGMENT TABLE INDICATES WHICH ABSOLUTE LOCATIONS OF THE USER'S OBJECT CODE WERE EXECUTED. THE SEGMENT TABLE IS WRITTEN OUT TO A FILE FOR POST PROCESSING. (2) THE PACE-C POST PROCESSORS - THE POST PROCESSOR DETERMINES WHICH SEGMENTS OF THE USER'S CODE WERE ACTUALLY TESTED. AS INPUT, IT READS THE SEGMENT TABLE PRODUCED BY THE EXTENDED SIMULATOR AS WELL AS AN ASSEMBLY LISTING OF THE CODE.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PBASIC, TITLE: PBASIC
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, BASIC, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PFORT
TOOL PORTABLE: YES
TOOL AVAILABLE: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: T. R. HOPKINS
TOOL SUMMARY: PBASIC IS A VERIFIER FOR ANS MINIMAL BASIC. THE VERIFIER MAY BE USED IN A NUMBER OF WAYS. FIRSTLY, PROGRAMS MAY BE DEVELOPED USING THE PROPOSED STANDARD AND THE VERIFIER USED TO CHECK THEIR ADHERENCE; THIS HAS BEEN FOUND USEFUL IN THE PRODUCTION OF PORTABLE NUMERICAL SOFTWARE. SECONDLY, PROGRAMS WRITTEN IN AN EXTENDED DIALECT MAY BE PASSED THROUGH THE VERIFIER SO THAT ALL DEVIATIONS FROM THE STANDARD MAY BE FOUND. THIS IS LIKELY TO BE OF VALUE WHEN LARGE PROGRAMS ARE BEING TRANSPORTED AND WILL MINIMIZE THE EFFORT REQUIRED TO ISOLATE NON-CONFORMING CONSTRUCTIONS BETWEEN SYSTEMS. FINALLY, INFORMATION PRODUCED BY THE VERIFIER MAY BE USED AS DATA TO FURTHER SOFTWARE TOOLS. IN ADDITION, THE VERIFIER PRODUCES CROSS-REFERENCE TABLES FOR ALL VARIABLE NAMES, ALL FUNCTIONS, ALL LINE NUMBERS USED AS LABELS AND ALL LINES BY STATEMENT TYPE.
REFERENCES: [PANS77], "PROPOSED AMERICAN NATIONAL STANDARD FOR MINIMAL BASIC", PROPOSED AMERICAN NATIONAL STANDARD, 770500
[RYDE74], B. G. RYDER, "THE PFORT VERIFIER", SOFTWARE PRACTICE AND EXPERIENCE, 4, 359-377, 740000
[GENZ79], A.C., GENZ, T.R. HOPKINS, "PORTABLE NUMERICAL SOFTWARE FOR MICROCOMPUTERS", PROCEEDINGS OF THE NS79 CONF. AT LIVERPOOL UNIV., 790000
[LAWR78], A.R. LAWRENCE, "SCRUB", SYSTEMATICALLY CLEAN AND RENUMBER USERS BASIC, 780000
[HOPK80], T. R., "PBASIC--A VERIFIER FOR BASIC", SOFTWARE--PRACTICE AND EXPERIENCE, 801000
DEVELOPER: T.R. HOPKINS
CONTACT: T. R. HOPKINS, UNIVERSITY OF KENT AT CANTERBURY, COMPUTING LABORATORY, CANTERBURY, KENT, CT27NF, UK,
INFORMATION SOURCE: SOF-PRAC EXP

ACRONYM: PDL, TITLE: PROGRAM DESIGN LANGUAGE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, DESIGN SPECIFICATION, DESIGN LANGUAGE, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, DECSYSTEM-10/20, SEL 32, DEC PDP-11, CDC 6X00/7X00, UNIVAC 11XX
TOOL SUMMARY: THE PROGRAM DESIGN LANGUAGE (PDL) IS A TOOL TO AID IN DESIGNING AND DOCUMENTING A PROGRAM OR SYSTEM OF PROGRAMS. THE LANGUAGE IS SUPPORTED BY A PROCESSOR WHICH IS AVAILABLE FOR A WIDE VARIETY OF COMPUTERS. THE LANGUAGE IS SIMPLE TO LEARN AND SIMPLE TO USE. IT HAS PROVEN EFFECTIVE IN DEVELOPING COMPLETE DESIGNS PRIOR TO THE STARTING OF ANY PROGRAMMING ON A PROJECT. A DESIGN IN PDL IS WRITTEN IN STRUCTURED ENGLISH WHICH IS THEN INPUT TO THE PDL PROCESSOR. INPUT TO THE PROCESSOR CONSISTS OF CONTROL INFORMATION PLUS DESIGNS FOR PROCEDURES (CALLED "SEGMENTS" IN PDL). THE OUTPUT IS A WORKING DESIGN DOCUMENT CONSISTING OF A TABLE OF CONTENTS, A LISTING OF THE SEGMENTS AUTOMATICALLY FORMATTED, A DISPLAY OF THE

PROCEDURE CALLING TREE, AND A CROSS-REFERENCE OF THE PROCEDURE CALLS. IT IS FORMATTED TO BE EASILY PHOTO-REDUCED FOR LATER INCLUSION IN A PROJECT WORKBOOK. THE OUTPUT OF THE PROCESSOR CAN COMPLETELY REPLACE FLOWCHARTS.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: CAINE, FARBER GORDON, INC.
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PDS, TITLE: PROGRAM DEVELOPMENT SYSTEM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, CODE INPUT, FORTRAN, STRUCTURED FORTRAN, VHLL INPUT, DESIGN LANGUAGE, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, MANAGEMENT, TEST DATA MANAGEMENT, FILES MANAGEMENT, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC CYBER, UNIVAC 11XX
TOOL SUMMARY: THE PROGRAM DEVELOPMENT SYSTEM IS A MULTIPLE PURPOSE SOFTWARE PACKAGE DESIGNED TO PROVIDE A SINGLE TOOL FOR THE STRUCTURED DESIGN AND DEVELOPMENT OF FORTRAN COMPUTER PROGRAMS. IT IS A PRE-PROCESSOR, EXTENDING THE FORTRAN LANGUAGE TO INCLUDE STRUCTURED CONSTRUCTS AND PROVIDING A MEANS FOR A CONVERSION OF SUCH STRUCTURED FORTRAN TO STANDARD FORTRAN. IT IS A FILE CONTROL SYSTEM, DESIGNED TO REDUCE DEVELOPMENT COSTS AND INCREASE FILE CONTROL BY AUTOMATICALLY LISTING AND PROCESSING ONLY THOSE ROUTINES CHANGED SINCE THE PREVIOUS RUN, WHILE MAINTAINING A COMPLETE SYSTEM FILE. IT IS A TEST TOOL, CAPABLE OF CREATING AN INSTRUMENTED, COMPILABLE VERSION OF AN ORIGINAL STRUCTURED FORTRAN PROGRAM FOR THE COLLECTION AND DISPLAY OF TEST EXECUTION STATISTICS. LISTINGS PROVIDED BY THE SYSTEM ARE INDENTED TO SHOW THE LOGICAL STRUCTURE OF THE CODE, AND ARE IMPRINTED WITH DATE AND FILENAME INFORMATION.
DOCUMENTATION: IN PROGRESS
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PDS FLOW, TITLE: PDS FLOW
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: PDS FLOW CREATES FLOWCHARTS FOR PROGRAMS WRITTEN IN A STRUCTURED LANGUAGE. FLOWCHARTS ARE CREATED ON A GRAPHICS DEVICE AND ARE DESIGNED TO REPRESENT THE COMPLETE CONTROL FLOW OF THE PROGRAM FROM A SOURCE CODE FILE. WHILE SPECIAL SYMBOLS HAVE BEEN CREATED TO REPRESENT THE COMPLETE CONTROL FLOW OF THE PROGRAM FROM A SOURCE CODE FILE. WHILE SPECIAL SYMBOLS HAVE BEEN CREATED TO REPRESENT THE STRUCTURED CODE FORM, BOTH STRUCTURED AND UNSTRUCTURED CONSTRUCTS ARE PLOTTED. PDS FLOW POSITIONS CODE TO INDICATE ITS PLACE WITHIN THE CONTROL STRUCTURE OF THE ROUTINE. IN THIS SENSE, CODE IS NOT SIMPLY PLOTTED A LINE AT A TIME. INDENTATION IS USED TO SHOW THE POSITION OF CODE WITHIN DO WHILE, DO UNTIL, DO FOR, IF THEN ELSE, AND IF THEN ORIF ELSE CONSTRUCTS, AND LINES OF CONSECUTIVELY EXECUTABLE CODE WHICH DO NOT EFFECT THE CONTROL STRUCTURE ARE PLOTTED WITHIN A SINGLE BLOCK. SUCH FEATURES ARE USED TO CONTROL PLOT SIZE AND PRESENT A ROUTINE IN A MANNER ACCENTUATING THE CONTROL FLOW WHILE PRESERVING DETAIL.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PDSS, TITLE: PROJECT DATA SCHEDULING SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE PROJECT DATA SCHEDULING SYSTEM WAS DEVELOPED TO ASSIST IN THE SCHEDULING AND MANAGEMENT OF PROJECT EVENTS AND DELIVERABLES. USING A DATA BASE CONTAINING DATES AND DATE-MODIFYING INFORMATION FOR PROJECT EVENTS, PDSS PRODUCES A GRAPHIC DISPLAY OF THE PREDICTED SCHEDULE FOR THE PROJECT. EVENTS MAY BE SCHEDULED RELATIVE TO KEY PROJECT DATES, MAY BE ENTERED AS ACTUAL DATES OR MAY BE LEFT BLANK. ALL DATA IS ENTERED ONLY ONCE, AND NEED NOT BE MANIPULATED UNLESS CHANGES OCCUR. PDSS CALCULATES ALL

POSSIBLE EVENT DATES USING WHATEVER INFORMATION IS AVAILABLE, INCLUDING HOLIDAYS IN CALCULATIONS IF DESIRED. ADDITIONALLY, KEY PROJECT DATES MAY BE ENTERED SEPARATELY WITH AN IDENTIFIER (IE: CDR, FCA). USE OF THIS IDENTIFIER TO FIX OTHER PROJECT EVENTS ALLOWS A FLUXUATION OF THE KEY DATES WITH A MINIMAL EFFECT ON THE DATA BASE. OUTPUT FROM PDSS IS PRODUCED ON THE VERSATEC PLOTTER, AND MAY BE SORTED IN A VARIETY OF WAYS. REPORT OUTPUT INCLUDES EVENT TITLES, DELIVERY DATES AND CONTROLLING DATES.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PERCAM, TITLE: PERFORMANCE AND CONFIGURATION ANALYSIS MODEL
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: PERCAM IS AN ANALYSIS METHODOLOGY WHICH PROVIDES FOR THE REPRESENTATION OF SYSTEMS IN THE FORM OF EVENT LOGIC TREES (ELTS), AND WHICH SUBSEQUENTLY AUTOMATES THE CONSTRUCTION OF A SIMULATION WHOSE OPERATIONAL SEQUENCING LOGIC DUPLICATES THE DESIGNED ELTS. AN ELT IS THE GRAPHIC REPRESENTATION OF A SYSTEM, INCLUDING THOSE FUNCTIONS AND DECISIONS INCLUDED IN THE SYSTEM. BY FORMING A COMPUTER LIBRARY CONTAINING DESCRIPTIONS OF THE PRIMITIVE COMPONENTS OF THIS GRAPHIC REPRESENTATION, A COMPUTER MODEL CAN BE CONSTRUCTED WITH THE LIBRARY COMPONENTS TO SIMULATE THE WORKINGS OF THE PROPOSED SYSTEM ON THE COMPUTER. IN THIS MANNER, PERCAM PROVIDES A TECHNIQUE VALUABLE IN THE DEFINITION AND DEVELOPMENT PHASES OF A PROJECT. A PROPOSED SYSTEM MAY BE DESIGNED GRAPHICALLY, AND A LIBRARY DESIGNED OR AN EXISTING LIBRARY UTILIZED TO REPRESENT THE SYSTEM'S COMPONENTS. SIMULATIONS OF THE TARGET SYSTEM CAN THEN BE CREATED AND THE SYSTEM REVISED UNTIL VERIFIED THROUGH ALTERATIONS IN THE LIBRARY AND ELT DESIGN.
DOCUMENTATION: USER'S MANUAL, PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100

DEVELOPER: TRW SOFT ANAL AND EVAL DEPT
CONTACT: J. FIELDS, TRW SOFT ANAL AND EVAL DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-2045
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PERLUETTE, TITLE: PERLUETTE
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): CII-HB
OS (OTHER SOFTWARE): MULTICS, SIRIS
TOOL SUMMARY: PERLUETTE IS A COMPILER GENERATOR BASED ON THE NOTION OF ABSTRACT TYPE ASSOCIATED WITH A LANGUAGE. EACH OF THREE "CONSTRUCTORS" PRODUCES ONE OF THE THREE PHASES OF THE COMPILER. THE FIRST "CONSTRUCTOR" ACCEPTS THE DEFINITION OF THE SOURCE LANGUAGE (SYNTAX AND SEMANTICS) AND BUILDS THE FIRST PHASE OF THE COMPILER, WHICH YIELDS THE FIRST INTERMEDIATE REPRESENTATION OF THE USER'S SOURCE PROGRAM. TRANSLATION AND REPRESENTATION CHOICES ARE INPUT TO THE SECOND "CONSTRUCTOR" TO PRODUCE THE SECOND PHASE OF THE COMPILER (GENERATOR OF THE SECOND INTERMEDIATE REPRESENTATION OF THE USER'S PROGRAM). FINALLY, THE DEFINITION OF THE OBJECT LANGUAGE (SYNTAX AND SEMANTICS) IS SUBMITTED TO THE THIRD "CONSTRUCTOR" TO CREATE THE THIRD PHASE OF THE COMPILER, THAT WHICH GENERATES THE OBJECT CODE OF THE USER'S PROGRAM.
DOCUMENTATION: TECHNICAL REPORT
REFERENCES: [ANDR80], J. ANDRE, J. DUCLOY, P. LAFORGUE, H. MASSIE, AND J. C. RAULT, "CATALOGUE 1980 DE PROTOTYPES DE RECHERCHE EN LOGICIEL", ADI (AGENCE DE L'INFORMATIQUE), CNRS, FRANCE, 801100
DEVELOPER: INRIA
CONTACT: M. MAZAUD, INRIA, DOMAINE DE VOLUCEAU-ROCQUENCOURT, BP 105, LE CHESNAY, CEDEX, 78153, FRANCE, (3) 954.90.20
M.C. GAUDEL, INRIA, DOMAINE DE VOLUCEAU-ROCQUENCOURT, BP 105, LE CHESNAY, CEDEX, 78153, FRANCE, (3) 954.90.20
INFORMATION SOURCE: ADI/CNRS CATALOGUE 1980

ACRONYM: PET, TITLE: PROGRAM EVALUATOR AND TESTER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: DATA RANGE ANALYSIS, SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION, AUDITING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE

TOOL SUPPORTED: YES, TOOL SUPPORT: MCDONNELL-DOUGLAS CORPORATION
TOOL SUMMARY: PET ACCEPTS FORTRAN PROGRAMS AS INPUTS AND GATHERS AND ANALYZES DATA IN TWO GENERAL AREAS: (1) THE SYNTACTIC PROFILE OF THE SOURCE PROGRAM SHOWING THE NUMBER OF EXECUTABLE, NONEXECUTABLE, AND COMMENT STATEMENTS, THE NUMBER OF CALL STATEMENTS AND TOTAL PROGRAM BRANCHES, AND THE NUMBER OF CODING STANDARD'S VIOLATIONS, AND (2) ACTUAL PROGRAM PERFORMANCE STATISTICS CORRESPONDING TO VARIOUS TEST DATA SETS. WITH ALL OPTIONS ENABLED, THE ACTUAL PROGRAM PERFORMANCE STATISTICS PRODUCED BY THE PET INCLUDE: THE NUMBER AND PERCENTAGE OF THOSE EXECUTABLE SOURCE STATEMENTS ACTUALLY EXECUTED; THE NUMBER AND PERCENTAGE OF THOSE BRANCHES AND CALL'S ACTUALLY TAKEN OR EXECUTED; THE FOLLOWING SPECIFIC DATA ASSOCIATED WITH EACH EXECUTABLE SOURCE STATEMENT: A DETAILED EXECUTION COUNTS, DETAILED BRANCH COUNTS ON ALL IF AND GOTO STATEMENTS, AND MIN/MAX DATA RANGE VALUES ON ASSIGNMENT.
DOCUMENTATION: USER MANUAL, SYSTEM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
[STUC72], L. G. STUCKI, "A PROTOTYPE AUTOMATIC PROGRAM TESTING TOOL", AFIPS FALL JOINT COMPUTER CONFERENCE, 721205
[STUC75], L. G. STUCKI AND F. L. FOSHEE, "NEW ASSERTION CONCEPTS FOR SELF-METRIC SOFTWARE VALIDATION", PROC OF 1975 INT CONF ON RELIABLE SOFTWARE, 750421
DEVELOPER: MCDONNELL-DOUGLAS CORPORATION
CONTACT: J. B. CHURCHWELL, MCDONNELL-DOUGLAS CORPORATION, 5301 BOLSA AVENUE, HUNTINGTON BCH, CA, 92647, USA, 714-896-4155
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS, TRW SOFTWARE TOOLS CATALOG

ACRONYM: PFORT, TITLE: PFORT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THE PFORT VERIFIER, DEVELOPED AND DISTRIBUTED BY THE BELL RESEARCH LABORATORIES, MURRAY HILL, NEW JERSEY, ANALYZES A FORTRAN PROGRAM AND NOTES THE OCCURRENCES OF PROGRAMMING PRACTICES THAT ARE LIKELY TO BE IMPEDIMENTS TO PORTABILITY.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200

DEVELOPER: JET PROPULSION LABORATORY
CONTACT: IRMA B. BIREN, BELL LABORATORIES, 600 MOUNTAIN AVENUE, MURRAY HILL, NJ, 07974, USA, 201-582-3000
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS, RADC-TR-80-13, INTERIM REPORT

ACRONYM: PFS, TITLE: PROJECT FORECASTING SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE PROJECT FORECAST SYSTEM IS A TIMESHARE, COMPUTER BASED SYSTEM WHICH PRICES AND FORMATS COST DATA AND TABULATES AND PLOTS INDENTED WORK BREAKDOWN STRUCTURE CHARTS. THE SYSTEM GREATLY REDUCES THE EFFORT REQUIRED TO SPREAD AND PRICE COST DATA DURING PROJECT BUDGETING AND ESTIMATE-TO-COMPLETE PREPARATIONS. PFS ALLOWS PROJECT PLANNING AND CONTROL PERSONNEL TO RAPIDLY ITERATE THEIR FORECASTS WHILE UPDATING THEIR DATA THROUGH REMOTE TERMINALS. INPUT FOR THE SYSTEM, WHICH MAY COME FROM TERMINALS OR THE TRW PROJECT REPORTING AND REVIEW (PR+R) SYSTEM, CONSISTS OF COST DATA (JOB NUMBER, COST ELEMENT, COST CENTER, AND COSTS IN DOLLARS, MANHOURS OR MANMONTHS), RATE DATA (BY BURDEN POOL, COST CENTER OR TOTAL), THE ACCOUNTING CALENDAR, AND ACTUAL COSTS (BY JOB NUMBER). OUTPUT CONSISTS OF DETAIL COST, SUMMARY COST, FORECAST EXPENDITURE PLAN AND MANPOWER EXPENDITURE PLAN REPORTS AS WELL AS INDENTED WORK BREAKDOWN STRUCTURE CHARTS. THE COST DETAIL REPORTS, ETC. ARE VALUABLE PROJECT/SUBPROJECT OFFICE TOOLS.
DOCUMENTATION: USER'S MANUAL, USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW MGMT SYS PLANNING ANAL
CONTACT: KEN SCHULTZ, TRW MGMT SYS PLANNING ANAL, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-2326
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PIDGIN-FASP, TITLE: PIDGIN-FASP
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, GRAPHICS, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): KRONOS

TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: NAVAL AIR DEVELOPMENT CENTER
TOOL SUMMARY: PIDGIN IS A DESIGN LANGUAGE WITH ASSOCIATED PROCESSOR FOR SPECIFYING AND DOCUMENTING THE SOFTWARE DESIGN OF A PROGRAM. IT IS USED TO SPECIFY AND DOCUMENT THE INPUTS, OUTPUTS, AND PROCESSING FUNCTIONS DESIGN TO BE PERFORMED BY EACH MODULE. THE PIDGIN "LANGUAGE" RESEMBLES A VERY HIGH-LEVEL, MACHINE-INDEPENDENT NATURAL PROGRAMMING LANGUAGE IN THAT USER INPUT CONSISTS OF ORDINARY ENGLISH PHRASES WITH LOGICAL DECISIONS DENOTED BY A STANDARD SET OF STRUCTURED KEYWORDS. THE STRUCTURED KEYWORDS SUPPORTED BY THE PIDGIN PROCESSOR INCLUDE IF-THEN-ELSE, DOWHILE, DOUNTIL AND CASE. CONSEQUENTLY, THE OUTPUT WHICH IS A STRUCTURED ENGLISH DESCRIPTION OF THE PROGRAM LOGIC, IS "NATURAL" IN APPEARANCE AND CLEARLY INDICATE THE FLOW OF CONTROL WITH OVERPRINTING OF KEYWORDS AND INDENTING OF ANY NESTED STRUCTURED CONSTRUCTS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: NAVAL AIR DEVELOPMENT CENTER
CONTACT: J. BERGEY, NAVAL AIR DEVELOPMENT CENTER, ADVAN. SOFT. TECH. DIV, CODE 503, WARMINSTER, PA, 18974, USA, 215-441-3145
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: PMCS, TITLE: PROJECT MANAGEMENT AND CONTROL SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COMPASS
TOOL SIZE: CORE: 165K
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): CDC 6600 SECRE, KRONOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: PMCS (PROJECT MANAGEMENT AND CONTROL SYSTEM) IS A CRITICAL PATH PLANNING SYSTEM USED FOR SCHEDULING AND CONTROLLING LARGE COMPLEX PROJECTS. IT ALLOWS THE USER TO QUICKLY IDENTIFY CURRENT AND POTENTIAL PROBLEM AREAS WITHIN A PROJECT SO THAT CORRECTIVE ACTION CAN BE TAKEN. SOME OF THE FEATURES OF THE PACKAGE ARE: UP TO 15,000 ACTIVITIES AND 12,000 EVENTS CAN BE CONTROLLED, MULTIPLE STAND-ALONE START AND END EVENTS WITHIN A NETWORK OR SUBNETWORK CAN BE IDENTIFIED, MULTI-PROJECT SCHEDULING AND REPORTING ARE STANDARD FUNCTIONS, UP TO NINE MILESTONE LEVELS MAY BE IDENTIFIED, BOTH ARROW DIAGRAM AND PRECEDENCE DIAGRAM NETWORKS ARE INCLUDED, AND RANDOM ASSIGNMENT OF ALPHANUMERIC NODE NUMBER OR NAME IS ALLOWED. SOME OF THE

REPORTS AVAILABLE FROM THIS SYSTEM INCLUDE: A DIAGNOSTIC PRINTOUT FOR ERRORS AND INCONSISTENCIES, FLEXIBLE 10-YEAR CALENDAR WITH TWO CALENDAR REPORT FORMATS, AND A REPORT ON TIME PROGRESS AS A PERCENTAGE OF COMPLETENESS. UP TO THREE ESTIMATE (DURATION) FACTORS MAY BE SPECIFIED.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: MULTIPLE ACCESS COMPUTER GROUP
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: PMS IV, TITLE: PROJECT MANAGEMENT SYSTEM IV
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL SIZE: CORE: 44K TO 75K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: PMS IV (5734-XP4) IS A MANAGEMENT TOOL DESIGNED TO AID IN THE PLANNING AND CONTROL OF RESOURCES. THE SYSTEM PROVIDES CRITICAL PATH AND GENERAL COST ANALYSES, PERT AND PERT COST CAPABILITIES, PRECEDENCE AND PRECEDENCE/COST CAPABILITIES, AS WELL AS RESOURCE ALLOCATION. A FLEXIBLE ADD-ON AND SUBSTITUTION CAPABILITY ALLOWS FOR A GROWING LIBRARY OF MANAGEMENT-ORIENTED ROUTINES AND PERMITS THE USER TO TAILOR THE PROGRAM TO THE SPECIFIC REQUIREMENTS OF HIS INSTALLATION. PMS IV OFFERS THREE OPTIONAL FEATURES: AN EXTENDED NETWORK PROCESSOR, A COST PROCESSOR FOR COST ACCOUNTING, AND A RESOURCE ALLOCATION PROCESSOR FOR SCHEDULE ADJUSTMENT BASED UPON RESOURCE AVAILABILITY.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: IBM
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: POD, TITLE: PERFORMANCE ORIENTED DESIGN
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, VHLL INPUT, SYSTEM SPECIFICATION, USER OUTPUT, GRAPHICS, TABLES, DYNAMIC ANALYSIS, SIMULATION, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): DETAILS FROM BGS SYSTEMS
TOOL SUPPORTED: YES
TOOL SUMMARY: THE BASIC GOALS OF PERFORMANCE ORIENTED DESIGN MAY BE SUMMARIZED AS FOLLOWS: (A) TO PROVIDE BETTER MANAGEMENT CONTROL DURING SYSTEM DESIGN AND IMPLEMENTATION

BY ENABLING PROJECT MANAGERS TO DEFINE AND VALIDATE PERFORMANCE OBJECTIVES AT EACH STAGE OF THE DEVELOPMENT PROCESS. (B) TO REDUCE TOTAL DEVELOPMENT TIME AND COST BY PROVIDING DESIGNERS AND IMPLEMENTORS WITH EARLY WARNING OF UPCOMING PERFORMANCE PROBLEMS AND BY FOCUSING ATTENTION ON CRITICAL PROBLEM AREAS. (C) TO REDUCE MAINTENANCE COSTS BY PROVIDING MAINTENANCE PERSONNEL WITH PERFORMANCE RELATED INFORMATION WHICH CAN BE CONSULTED WHEN PERFORMANCE PROBLEMS ARISE AFTER THE SYSTEM IS DEPLOYED. (D) TO REDUCE DEVELOPMENT TIME AND COST FOR FUTURE SYSTEMS BY PROVIDING DESIGNERS WITH PERFORMANCE RELATED INFORMATION ABOUT EXISTING SYSTEMS WHICH WILL BE OF DIRECT VALUE IN FUTURE DESIGN EFFORTS.
DOCUMENTATION: USERS MANUAL
DEVELOPER: BGS SYSTEMS
CONTACT: BGS SYSTEMS, INC., 1 UNIVERSITY OFFICE PARK, WALTHAM, MA, 02254, USA, 617-891-0000
INFORMATION SOURCE: TOOL FAIR

ACRONYM: PPE, TITLE: PROBLEM PROGRAM EVALUATOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, RESOURCE UTILIZATION, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: PPE ENABLES A USER TO IDENTIFY TIME CONSUMING AREAS OF PROGRAM CODE OR OTHER PROGRAM CHARACTERISTICS THAT RESULT IN INEFFICIENT RUNNING TIMES. PPE'S APPROACH IS TO HAVE AN IN-CORE RESIDENT MONITOR, THE EXTRACTOR PROGRAM, WHICH SAMPLES THE ACTIVITY OF THE PROBLEM PROGRAM AND OUTPUTS THIS ACTIVITY DATA TO AN EXTRACTOR DATA SET. THE EXTRACTOR DATA SET CAN BE RECORDED ON TAPE OR DISK. THE USER'S PROGRAM RUNS NORMALLY, AND NO RECOMPILATION IS NECESSARY. THE REPORT PROGRAM, ANALYZER, PRODUCES AN EASY-TO-UNDERSTAND CODE ACTIVITY REPORT, BASED ON THE EXTRACTOR DATA SET THE ANALYZER CAN BE RUN AS THE SECOND PART OF A JOB WITH THE EXTRACTOR OR AT A LATER TIME AS A STAND ALONE JOB.
DOCUMENTATION: PROGRAM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, OPERATING SYSTEMS DEPARTMENT
CONTACT: D. MARTIN ROBINSON, TRW, OPERATING SYSTEMS DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0682
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: PPP, TITLE: PROJECT PRE-PLANNER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE

FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: PL/1
TOOL SIZE: CORE: 20K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/MVS
TOOL AVAILABLE: NO
TOOL SUMMARY: THIS PROGRAM IS DESIGNED TO INTERACTIVELY CREATE, MODIFY, AND PLOT SOFTWARE DEVELOPMENT PROJECT STRUCTURES USING A 4014 OR 4015 TEKTRONIX STORAGE TERMINAL AS A FRONT-END TO PERT OR CPM. A 12" BY 9" WINDOW CAN BE VIEWED AS A SECTION OF A 36" BY 30" PLOTTING SURFACE. THE PLOTTING PROGRAM CAN CREATE A LARGE SIZE CALCOMP PLOT IN COLOR OR BLACK AND WHITE, TOGETHER WITH ANY NUMBER OF SMALL PLOTS. THE OPERATION OF THE PROGRAM IS CONDUCTED BY TYPING A UNIQUE KEYSTROKE FOR EACH OPERATION. THE PROGRAM CAN GENERATE FIGURES, LINES AND TEXT. ONLY ONE FLOW CHART AT A TIME CAN BE CREATED, SO THAT A DATA SET MUST BE DEFINED AND SAVED FOR EACH DRAWING. THE DATA SET WILL SERVE AS THE INPUT TO A PROGRAM THAT WILL CREATE A CALCOMP 30" WIDE PLOT. THE END PRODUCT IS THEN USED AS AN INPUT INTO STANDARD PERT OR CPM SOFTWARE.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: APPLIED PHYSICS LABORATORY
CONTACT: JOHN H. MANLEY, APLLIED PHYSICS LABORATORY, JOHNS HOPKINS ROAD, LAUREL, MD, 20810, USA, 301-953-7100
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: PREF HDR GEN, TITLE: PREFACE HEADER GENERATOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, INTERFACE ANALYSIS, I/O SPECIFICATION ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): MODCOMP
PUBLIC DOMAIN: YES
TOOL SUMMARY: THE HEADER GENERATOR TOOL PRODUCES A COMPLETE PICTURE OF THE FLOW OF DATA INTO AND OUT OF A SUBPROGRAM. THE RESULTING PICTURE CAN BE USED TO VERIFY THAT EACH SUBPROGRAM OF A SYSTEM MEETS ITS INTERFACE SPECIFICATION, ENSURING THAT EACH SUBPROGRAM USES ONLY ITS SPECIFIED INPUTS AND PRODUCES ONLY ITS SPECIFIED OUTPUTS. THE ANALYST CAN USE THE PROGRAM-GENERATED OUTPUT DURING THE CODING PHASE OF SYSTEM DEVELOPMENT TO VERIFY THAT A SUBPROGRAM IS USING ONLY THOSE INPUTS AND OUTPUTS THAT HAVE BEEN SPECIFIED IN THE SYSTEM DESIGN. DURING ALL PHASES OF THE SYSTEM'S EXISTENCE, THE OUTPUT CAN BE USED TO VERIFY THAT THE PREFACE BLOCK CONTAINED IN A SUBPROGRAM'S SOURCE CODE HAS BEEN CREATED AND MAINTAINED CORRECTLY, OR, IF NO PREFACE BLOCK EXISTS, THEN THE OUTPUT PROVIDES A STRONG FRAMEWORK FROM WHICH TO CREATE ONE.

DOCUMENTATION: TECHNICAL PAPER
DEVELOPER: TELEDYNE BROWN ENGINEERING
CONTACT: R. E. ALGER, TELEDYNE BROWN ENGINEERING, CUNNINGS RESEARCH PARK, HUNTSVILLE, AL, 35807, USA, 205-532-1257
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: PROG COMP ANAL, TITLE: PROGRAM COMPARISON ANALYSIS
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, OBJECT CODE INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON, MANAGEMENT, CONFIGURATION MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): MODCOMP
PUBLIC DOMAIN: YES
TOOL SUMMARY: THE PROGRAM COMPARISON ANALYSIS TOOL PROVIDES THE MEANS TO COMPARE TWO SOFTWARE SYSTEM VERSIONS, AT EITHER THE SOURCE OR OBJECT LEVEL, TO DETERMINE IF THEY ARE IDENTICAL. IT SERVES PRIMARILY AS A TOOL FOR CONFIGURATION MANAGEMENT. DURING THE CODING AND TEST PHASES OF DEVELOPMENT, THE TOOL MAY BE USED TO VERIFY THAT EACH DELIVERY AND REVISION OF SOFTWARE RECEIVED, WHETHER IN SOURCE OR OBJECT FORM, CONTAIN ONLY THOSE MODIFICATIONS IDENTIFIED. IF THE SYSTEM IS DEPLOYED TO MULTIPLE SITES, THIS TOOL CAN BE USED DURING THE MAINTENANCE PHASE OF THE SYSTEM'S EXISTENCE TO VERIFY THAT A PARTICULAR OBJECT VERSION OF THE SYSTEM IS INSTALLED AT A GIVEN SITE.
DOCUMENTATION: TECHNICAL PAPER
DEVELOPER: TELEDYNE BROWN ENGINEERING
CONTACT: R. E. ALGER, TELEDYNE BROWN ENGINEERING, CUNNINGS RESEARCH PARK, HUNTSVILLE, AL, 35807, USA, 205-532-1257
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: PROGLOOK, TITLE: PROGLOOK
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, GRAPHICS, ACTIVITY DIAGRAMS, TABLES, STATIC ANALYSIS, SCANNING, DYNAMIC ANALYSIS, TUNING, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV, ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: PROGLOOK CONSISTS OF TWO PROGRAMS, PROGTIME AND PROGPLOT, WHICH ENABLE THE USER TO MAKE DETAILED MEASUREMENTS OF HIS PROGRAM WHILE IT IS RUNNING IT CAN BE USED TO MEASURE ANY USER PROGRAM THAT CAN BE RUN UNDER OS/MVT, OS/MFT, OR VS2 REL 1.6; WITH IT, THE USER CAN ASCERTAIN WHAT ACTION HE MUST TAKE IN ORDER TO IMPROVE THE PERFORMANCE OF THE PROGRAM. PROGTIME USES A CONTROL CLOCK TO SNAP A PICTURE OF ANY PROGRAM RUNNING UNDER IT AND RECORDS THIS INFORMATION IN A SPECIALLY FORMATTED DATA SET.

IT IS DESIGNED TO HANDLE OVERLAY STRUCTURES AND DYNAMIC PROGRAMMING LINKAGES. THE NEW VERSION OF PROGTIME HAS PROVISIONS FOR ELIMINATING INTERFERENCE FROM OTHER JOBS IN THE SYSTEM. IT WILL ALSO PROPERLY TIME PROGRAMS USING THE LOAD MACRO. THE SPECIALLY FORMATTED DATA SETS SERVE AS INPUT FOR PROGPLOT, WHICH PRINTS SUMMARIES OF THE OBSERVATIONS. THE TWO PROGRAMS WORK IN CONJUNCTION TO PRODUCE GRAPHS THAT SHOW WHERE THE PROGRAM HAS SPENT ITS TIME (BOTH RUN AND WAIT-TIME) AND HOW PERFORMANCE CAN BE IMPROVED.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: COSMIC
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: PROGRAM GENERAT, TITLE: PROGRAM GENERATOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, PROGRAM SPECIFICATION, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800315
IMPLEMENTATION LANGUAGE: BASIC HP 250 EXTENDED
COMPUTER (OTHER HARDWARE): HP 85 (160K SYS MEMORY, 64K USER MEMORY)
TOOL SUMMARY: GENERATES SOURCE CODE FOR PROGRAMS TO BE USED IN SMALL BUSINESS SYSTEMS. THE SYSTEM IS EXPECTED TO INCREASE OVER-ALL PRODUCTION OF SOFTWARE BY A FACTOR OF 4.
DEVELOPER: LAKESIDE
CONTACT: BILL AUSTIN, LAKESIDE, BOX 800, BROOKS, ALBERTA, TOJ OJO, CANADA, 403-362-3326
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: PRONET, TITLE: PROJECT NETWORK SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, ACTIVITY DIAGRAM, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT, DYNAMIC ANALYSIS, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: DESIGN
TOOL PORTABLE: YES
TOOL SUMMARY: THE PRONET (PROJECT NETWORK) SYSTEM IS DESIGNED TO MONITOR BOTH THE PLANNING AND THE EXECUTION OF A GIVEN PROJECT. THE DEFINITION OF THIS PROJECT MAY FOLLOW A FREE FORMAT, OR ELSE, IF THE RELATIONSHIPS BETWEEN PROJECT ACTIVITIES ARE THEMSELVES DEFINABLE, THE PROJECT MAY BE DEFINED IN TERMS OF NETWORK PLANNING. IN EITHER CASE, PRONET GENERATES AND GRAPHICALLY DISPLAYS A PERT CHART ON WHICH IS TRACED THE PROGRESS OF THE PLAN. THE SYSTEM STORES INFORMATION CONCERNING THE FACTORS INVOLVED IN ARRIVING AT THE TARGET DATA AND IN ESTIMATING THE COST OF THE PROJECT IN QUESTION. SHOULD ANY OF THESE FACTORS CHANGE, THE SYSTEM CALCULATES NECESSARY REVISIONS. THIS FACILITATES MODIFICATIONS OF THE PROJECT AND ASSISTS THE PROJECT TEAM IN DEALING WITH THE UNEXPECTED. SINCE PRONET IS DESIGNED TO HANDLE BOTH NETWORK AND FREE-FORM PLANNING,

A PROJECT PLAN MAY CONSIST OF ACTIVITIES THAT ARE EITHER RELATED OR ELSE INDEPENDENT OF EACH OTHER.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: SYSNET COMPANY
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: PSL, TITLE: PROGRAMMING SUPPORT LIBRARY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: STANDARDS ENFORCEMENT, SUBJECT, CODE INPUT, FORTRAN, COBOL, JOVIAL, JOVIAL J3, COBOL 68, TRANSFORMATION, FORMATTING, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, STATIC ANALYSIS, AUDITING, MANAGEMENT, LIBRARY MANAGEMENT, FILES MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 770000
IMPLEMENTATION LANGUAGE: COBOL 68
TOOL PORTABLE: NO, TOOL SIZE: CORE: 37K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
TOOL AVAILABLE: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THE WWMCCS PSL WILL PROVIDE THE FACILITIES TO ORGANIZE AND CONTROL THE DEVELOPMENT AND MAINTENANCE OF A PROGRAMMING PROJECT. THE SYSTEM WILL PROVIDE A MEANS OF COMMUNICATION BETWEEN PROJECT DEVELOPERS AND SERVE AS THE INTERFACE BETWEEN THE PROGRAMMING PERSONNEL AND THE COMPUTER SYSTEM. THE PSL PROVIDES SUPPORT TO ALL ASPECTS OF THE PROGRAM DEVELOPMENT PROCESS INCLUDING DESIGN, CODING TESTING, DOCUMENTATION AND MAINTENANCE. THE PSL PROVIDES THIS SUPPORT THROUGH: STORAGE AND MAINTENANCE OF PROGRAMMING DATA; OUTPUT OF PROGRAMMING AND RELATED CONTROL DATA; SUPPORT OF COMPILATION AND TESTING OF PROGRAMS; SUPPORT OF THE GENERATION OF PROGRAM DOCUMENTATION; COLLECTION AND REPORTING OF MANAGEMENT DATA RELATED TO PROGRAM DEVELOPMENT; CONTROL OVER THE INTEGRITY AND SECURITY OF THE DATA STORED IN THE PSL; SEPARATION OF THE CLERICAL ACTIVITY RELATED TO THE PROGRAMMING PROCESS.
DOCUMENTATION: USER'S MANUAL (300), MAINTENANCE MANUAL (300)
REFERENCES: [RADC74], RADC, "STRUCTURED PROGRAMMING SERIES", RADC TR-74-300, (15 VOLUMES), 740000
DEVELOPER: ROME AIR DEVELOPMENT CENTER (ISIE)
CONTACT: LAWRENCE M. LOMBARDO, ROME AIR DEVELOPMENT CENTER/ISIE, GRIFFISS AFB, NY, 13441, USA, 315-330-7834
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: PSL/PSA, TITLE: PROBLEM STATEMENT LANGUAGE/PROBLEM STATEMENT ANALYZER
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS

FEATURES: SUBJECT, DATA INPUT, VHLL INPUT, REQUIREMENTS LANGUAGE, PSL, PROBLEM STATEMENT LANGUAGE, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, GRAPHICS, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, COMPLETENESS CHECKING, CONSISTENCY CHECKING, ERROR CHECKING, SYNTAX CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): SPONSORSHIP
TOOL SUMMARY: PROBLEM STATEMENT LANGUAGE/PROBLEM STATEMENT ANALYZER (PSL/PSA) IS A LANGUAGE AND ASSOCIATED PROCESSOR THAT SUPPORTS AN ANALYST IN THE PREPARATION OF A REQUIREMENTS DOCUMENT OR A TOP LEVEL DESIGN OF AN INFORMATION PROCESSING SYSTEM. PSL/PSA HAS BEEN DEVELOPED AT THE ISDOS PROJECT AT THE UNIVERSITY OF MICHIGAN UNDER THE DIRECTION OF PROFESSOR D. TEICHROEW. IT IS CURRENTLY AVAILABLE ON A NUMBER OF LARGE SCALE COMPUTERS. TO USE PSL/PSA, THE ANALYST FIRST DESCRIBES A PORTION OF THE TARGET SYSTEM USING THE FORMAL STATEMENTS OF PSL. THESE STATEMENTS ARE THEN ANALYZED BY PSA FOR SYNTACTICAL CORRECTNESS AND ARE ADDED TO A DATA BASE THAT CONTAINS ALL INFORMATION ABOUT THE TARGET SYSTEM. AT THE COMMAND OF THE ANALYST, VARIOUS REPORTS ARE GENERATED BY PSA THAT DESCRIBE DIFFERENT ASPECTS OF THE TARGET SYSTEM. THESE THREE STEPS ARE REPEATED UNTIL ALL ASPECTS OF THE TARGET SYSTEM ARE DESCRIBED IN PSL AND HAVE BEEN ENTERED INTO THE DATA BASE.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [TEIC77], TEICHROEW, DANIEL, AND ERNEST A. HERSHEY III, "PSA/PSA: A COMPUTER-AIDED TECH. FOR STRUC. DOCU. ANALYSIS OF IPS", VOL. SE-3, NO. 1, IEEE TRANSACTIONS ON SOFT. ENG., 770100
CONTACT: CYRIL P. SVOBODA, ADVANCED SYSTEMS TECHNOLOGY CORPORATION, 9111 EDMONSTON ROAD, SUITE 302, GREENBELT, MD, 20770, USA, 301-441-9036
HASAN H. SAYANI, ADVANCED SYSTEMS TECHNOLOGY CORPORATION, 9111 EDMONSTON ROAD, SUITE 302, GREENBELT, MD, 20770, USA, 301-441-9036
DANIEL TEICHROEW, UNIVERSITY OF MICHIGAN, ISDOS PROJECT, 231/443 WEST ENGINEERING BLDG, ANN ARBOR, MI, 48109, USA, 313-763-2238
DAVID CALLENDER, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-5365
INFORMATION SOURCE: TOOL FAIR

ACRONYM: PWB FOR VAX/VMS, TITLE: PROGRAMMERS WORKBENCH TOOLS ON VAX/VMS
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, TRANSFORMATION, EDITING, MACHINE OUTPUT, OBJECT CODE OUTPUT, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, COMPARISON, COMPLETENESS CHECKING, MANAGEMENT,

CONFIGURATION MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: C
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): DEC PDP-11, ONYX, DEC VAX-11
OS (OTHER SOFTWARE): UNIX, VMS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE
TOOL SUPPORTED: YES, TOOL SUPPORT: INTERACTIVE SYSTEMS CORP.
TOOL SUMMARY: SOFTWARE DEVELOPERS NEED GOOD TOOLS TO IMPROVE THEIR PRODUCTIVITY. ONE SUCH SET OF TOOLS HAS BEEN AVAILABLE FOR SOME TIME NOW WITH THE PROGRAMMER'S WORKBENCH VERSION OF UNIX RUNNING ON THE DEC PDP 11 SERIES OF COMPUTERS. THE RECENT INTRODUCTION OF THE DEC VAX COMPUTERS WITH THE VMS OPERATING SYSTEM LEFT SOMETHING TO BE DESIRED IN THE AREA OF SOFTWARE TOOLS. A RICH SET OF LANGUAGES HAVE BEEN AND ARE BEING DEVELOPED UNDER THE VMS OPERATING SYSTEM, BUT THERE WAS NOTHING EQUIVALENT TO THE PWB TOOLS. INTERACTIVE SYSTEMS CORPORATION HAS RECENTLY INTRODUCED THE PWB TOOLS ON THE VAX/VMS SYSTEM, THEREBY IMPROVING THE PRODUCTIVITY OF SOFTWARE ENGINEERS ON THIS MACHINE SIGNIFICANTLY. THE TOOLS HAVE BEEN DESIGNED TO WORK EFFECTIVELY IN THE VMS ENVIRONMENT.
DEVELOPER: INTERACTIVE SYSTEMS
CONTACT: HEINZ LYCKLAMA, INTERACTIVE SYSTEMS CORPORATION, 1212 SEVENTH ST., SANTA MONICA, CA, 90401, USA, 213-450-8363
INFORMATION SOURCE: TOOL FAIR

ACRONYM: QCM, TITLE: QUANTITATIVE COMPUTER MANAGEMENT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, OPTIMIZATION, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370, AMDAHL 470
OS (OTHER SOFTWARE): OS, OS/VS, OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: QCM (QUANTITATIVE COMPUTER MANAGEMENT) IS A COMPREHENSIVE FAMILY OF FOUR INDEPENDENT BUT INTERRELATED COMPUTER MODULES DESIGNED TO MEASURE, REPORT, AND OPTIMIZE ALL FACETS OF COMPUTER UTILIZATION. THE MODULES ARE: SPM (SYSTEMS PERFORMANCE MODULE) FOR OFF-LINE CAPACITY PERFORMANCE MANAGEMENT AND OVERALL SYSTEM TUNING; SPI (SYSTEMS PERFORMANCE INTERROGATOR) FOR REAL-TIME DIAGNOSTIC PERFORMANCE MANAGEMENT AND SYSTEM PROGRAMMING CAPABILITIES VIA OPERATOR AND TSO COMMANDS; JOB ANALYSIS AND BILLING) FOR EQUITABLE, ACCURATE, AND REPEATABLE RESOURCE CHARGEBACK AND JOB ANALYSIS; AND A REGULATOR FOR DYNAMIC THROUGHPUT OPTIMIZATION AND REAL-TIME PRIORITY CONTROL OF JOB

WORKBACK. (EACH OF THESE MODULES IS DETAILED SEPARATELY IN THIS SECTION OF THE DIRECTORY. REFER TO THE INDEXES FOR THE EXACT LOCATIONS OF THE REPORTS.) AT THE HEART OF EACH COMPONENT IS A TIMING/MEASUREMENT SYSTEM THAT RECORDS ALL SOFTWARE AND HARDWARE USAGES.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: DEQUESNE SYSTEMS, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: QCRT, TITLE: QCRT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, FILES MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL ANSI
TOOL SIZE: CORE: 45K-IBM, 12K-HW
COMPUTER (OTHER HARDWARE): IBM 360/370, HONEYWELL 6XXX
OS (OTHER SOFTWARE): OS, OS/VS, DOS, GCOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: QCRT (QUICK CHANGE REAL TIMER) IS AN ON-LINE FILE MAINTENANCE SYSTEM DESIGNED TO REDUCE PROGRAMMING TIME FOR ANY ON-LINE APPLICATION. IT ALLOWS THE USER TO SET UP ON-LINE INQUIRY, EDIT, AND UPDATE CRT SCREENS WITH SIMPLE POSITION-STATING PARAMETERS. IT ALSO ALLOWS THE USER TO SET UP CORRESPONDING EDITING, VALIDATING, AND OTHER PROCESSING WITH PARAMETERS SIMILAR TO THOSE OF A REPORT GENERATOR. QCRT PROVIDES FOR CHECKPOINT/RESTART/RECOVERY PROGRAM LOOP CONTROL, MULTI-TASKING RECORD LOCKOUT, REAL-TIME ERROR HANDLING, AND OTHER ON-LINE CONSIDERATIONS. QCRT INCLUDES AN ABEND (DUMP) TRAP IN WHICH DATA EXCEPTION (OC7) TYPE PROCESSING ERRORS ARE INTERCEPTED AND TERMINATION FORCED. A GENERAL-PURPOSE ON-LINE DEBUGGING AND CONTROL SCREEN IS ALSO PROVIDED. THE SYSTEM USES THREE FORMS: ONE FOR CRT SCREEN FORMATTING, ONE FOR DATA MANIPULATION, AND ONE FOR TABLE LOOKUP. SECURITY IS PROVIDED VIA PASSWORDS QCRT WILL HANDLE MULTIPLE FILES, MULTIPLE RECORD TYPES, HIERARCHICAL FILE STRUCTURES, AND DATA BASES.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: THE MANAGEMENT GROUP, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: QUICK-DRAW, TITLE: SOURCE PROGRAM FLOWCHARTER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, COBOL, PL/1, ASSEMBLY LANGUAGE, USER OUTPUT, GRAPHICS, FLOW CHARTS, TABLES, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, OBJECT

COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX, HONEYWELL 6XXX
TOOL SUMMARY: QUICK-DRAW IS A SYNTAX ANALYSIS SYSTEM THAT SCANS COBOL, BAL, AUTO CODER, FORTRAN, AND PL/1 SOURCE PROGRAMS AND AUTOMATICALLY PRODUCES FLOWCHARTS, PROGRAM DIAGNOSTICS, AND A SERIES OF RELATED CROSS-REFERENCES. IT IS CONFIGURATION INDEPENDENT WITH NO MANUAL INTERVENTION OR SPECIAL PREPARATION REQUIRED.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: NATIONAL COMPUTER ANALYSIS, INC.
CONTACT: NATIONAL COMPUTER ANALYSIS, INC., US ROUTE 1, PRINCETON, NJ, 08540, USA, 609-452-2800
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: QUIKCODE, TITLE: QUIKCODE
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): RSX-11
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS
TOOL SUPPORTED: YES, TOOL SUPPORT: DIGITAL EQUIPMENT CORPORATION
TOOL SUMMARY: QUIKCODE IS A PROGRAMMING AID FOR THE USERS OF COBOL. AS A PRE-COMPILER TRANSLATOR, QUIKCODE PERFORMS MANY OF THE REDUNDANT, NON-CREATIVE TASKS INVOLVED WITH PROGRAMMING AND SUBSTANTIALLY REDUCES THE CODING REQUIRED. HAVING INTERNALLY DEFINED AND ABBREVIATED OVER 125 OF THE MOST FREQUENTLY USED RESERVED WORDS, THE BASIC STRUCTURE OF COBOL IS REDUCED TO A SET OF EASILY REMEMBERED MNEMONICS WHICH ARE AS EASY TO READ AS THE RESERVED WORDS THEY REPRESENT. KEY FEATURES OF QUIKCODE INCLUDE: INTERNAL AND EXTERNAL DATA NAME DICTIONARIES, MULTIPLE WORD EXPRESSIONS, MIX OF COBOL AND QUIKCODE STATEMENTS AND FORMATTING OF PROGRAMS.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: DIGITAL EQUIP. CORP., ASK(MLS-2/M46)-A0180, 146 MAIN ST., MAYNARD, MA.
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: RA, TITLE: REQUIREMENTS AUTOMATION
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS

FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, COMPLETENESS CHECKING, CONSISTENCY CHECKING, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): UNIX
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PROPRIETARY
TOOL SUMMARY: REQUIREMENTS AUTOMATION IS THE NAME GIVEN TO A METHODOLOGY, WITH AN ASSOCIATED SET OF TOOLS. RA WAS DESIGNED TO ASSIST IN THE MANAGEMENT ASPECTS ASSOCIATED WITH THE DEVELOPMENT AND CONTROL OF REQUIREMENTS. THESE INCLUDE ACCOUNTABILITY THAT ALL REQUIREMENTS HAVE BEEN ALLOCATED TO THE LOWEST LEVEL OF THE SYSTEM HIERARCHY, TRACEABILITY OF EACH REQUIREMENT TO A CONTRACTUAL SOURCE, IMPACT ASSESSMENT OF REQUIREMENTS CHANGES, AND REQUIREMENTS DOCUMENTATION PREPARATION AND CONTROL. KEY TO THE RA SYSTEM IS THE CREATION OF A REQUIREMENTS DATA BASE. INITIALLY, CONTRACTUALLY MANDATED REQUIREMENTS ARE EXTRACTED FROM APPROPRIATE SOURCE DOCUMENTATION. RA THEN PROVIDES THE FACILITIES TO SUPPORT THE ANALYST IN BUILDING AND ANALYZING THE REQUIREMENTS DATA BASE IN SUPPORT OF THE REQUIREMENTS MANAGEMENT PROCESS. THESE FACILITIES SUPPORT AUTOMATIC SPECIFICATION PREPARATION IN ACCORDANCE WITH MIL-STD FORMATS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: FORD AERO. AND COM. CORP., W. DEV. LAB. DIV., 3939 FABIAN WAY, PALO ALTO
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: RADC/FCA, TITLE: RADC FORTRAN CODE AUDITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: STANDARDS ENFORCEMENT, SUBJECT, CODE INPUT, FORTRAN, FORTRAN IV, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 760000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 40K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIE
TOOL SUMMARY: THE FORTRAN CODE AUDITOR, AN AUTOMATED TEST TOOL, IS USED FOR THE COST EFFECTIVE ENFORCEMENT OF FORTRAN PROGRAMMING STANDARDS AND CONVENTIONS APPROPRIATE TO THE AIR FORCE SOFTWARE ENVIRONMENT. IT DOES NOT MODIFY CODE. USING PREDEFINED CODING STANDARDS AND CONVENTIONS, IT SIMPLY ADVISES THE USER WHERE THESE STANDARDS AND CONVENTIONS HAVE NOT BEEN ADHERED TO. THE MAJOR ADVANTAGE

OF FAVORING AN AUTOMATED AUDITOR OVER MANUAL METHODS, BESIDES COST EFFECTIVENESS, IS COMPLETE OBJECTIVITY AND UNAMBIGUITY. THE STANDARDS CAN BE VIEWED AS BEING CODING ENFORCEMENTS IN FOUR AREAS: (1) DOCUMENTATION STANDARDS - STANDARDS DEFINING QUANTITY AND PLACEMENT OF COMMENTARY THUS ENHANCING PROGRAM READABILITY AND COMPREHENSIVE (2) FORMAT STANDARDS - STANDARDS IDENTIFYING PHYSICAL PLACEMENT AND GROUPING OF CODE ELEMENTS ON THE SOURCE CODE LISTING. (3) DESIGN STANDARDS - STANDARDS LIMITING MODULE SIZE AND PLACING RESTRICTIONS ON THE USE OF CERTAIN INSTRUCTIONS WITH THE END RESULT OF PROVIDING AN OPTIMIZATION OF CODE RELATIVE TO EXECUTION TIME. (4)
DOCUMENTATION: USER'S MANUAL (56), PROGRAM MAINTENANCE MANUAL (82)
CONTACT: FRANK S. LAMONICA, RADC/ISIE, GRIFFISS AFB, NY, 13441, USA, 315-330-7834
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: RATCODER, TITLE: RATCODER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, EDITING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, RATFOR,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL AVAILABLE: YES
TOOL SUMMARY: RATCODER PRODUCES ONE OR MORE STANDARD RATFOR PROGRAM MODULES FROM AN INPUT FILE OF LINES CONSISTING OF: MODULE NAME, AND A SHOT COMMENT DESCRIBING THE MODULE'S PURPOSE. EACH OF THE MODULES PRODUCED INCLUDES SUITABLY MARKED COMMENTS FOR THE HEADER (INCLUDING THE PURPOSE); MODULE AUTHOR, DATE, AND TIME; AND A PLACE TO INSERT NOTES RELATIVE TO THE MODULE. CONTROL DATA CORPORATION 'UPDATE' (REF. 8) CONDITIONAL SOURCE CODE BLOCKS ARE WRITTEN AT THE ENTRY AND EXIT OF EACH MODULE TO MARK THE NAME AND TIME OF ENTRY, AND THE TOTAL ELAPSED TIME IN THE MODULE. THESE BLOCKS ARE LOGICALLY DELETABLE WHEN THE PROGRAM UNDER DEVELOPMENT REACHES THE PRODUCTION STAGE; HOWEVER, THEY REMAIN IN THE SOURCE CODE LIBRARY. UNIQUENESS OF TEXT MARKS PRODUCED BY 'RATCODER' ALLOWS EASY LOCATION OF A SPECIFIC PORTION OF THE MODULES WITH A LINE ORIENTED TEXT EDITOR. SUFFICIENT 'WHITE SPACE' IS INCLUDED IN EACH MODULE TO ENHANCE READABILITY OF THE SOURCE CODE. THE DEVELOPER HAS USED THIS PROGRAM TO DEVELOP SEVERAL 'RATFOR' PROGRAMS.
DEVELOPER: NSRDC
CONTACT: PETER N. ROTH, NSRDC, STRUCTURES DEPARTMENT, BETHESDA, MD, 20084, USA, 202-227-1851
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: RATFOR, TITLE: RATIONAL FORTRAN TRANSLATOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION

FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, RATFOR, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 760000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): COPYRIGHT 1976 BY BELL TELEPHONE LABORATORIES,INC. AND YOURDON, INC.
TOOL SUMMARY: THE PRIMARY PURPOSE OF RATFOR IS TO MAKE FORTRAN A BETTER PROGRAMMING LANGUAGE, FOR BOTH WRITING AND EXPLAINING, BY PERMITTING AND ENCOURAGING READABLE AND WELL-STRUCTURED PROGRAMS. THIS IS DONE BY PROVIDING THE CONTROL STRUCTURES THAT ARE UNAVAILABLE IN BARE FORTRAN, AND BY IMPROVING THE "COSMETICS" OF THE LANGUAGE. THE CONTROL FLOW STRUCTURES ARE IF-ELSE, WHILE, DO, BREAK, NEXT, FOR, REPEAT-UNTIL, AND STATEMENT GROUPING WITH BRACES. RATFOR IS TRANSLATED INTO FORTRAN, THUS RETAINING THE ADVANTAGES OF FORTRAN - UNIVERSALITY, PORTABILITY, AND RELATIVE EFFICIENCY - WHILE AT THE SAME TIME CONCEALING ITS WORST DRAWBACKS.
DOCUMENTATION: PROGRAM DESCRIPTION (34)
REFERENCES: [KERN76], BRIAN W. KERNIGHAN AND P. J. PLAUGER, "SOFTWARE TOOLS", ADDISON-WESLEY PUBLISHING CO., 760000
DEVELOPER: ADDISON-WESLEY PUBLISHING CO.
INFORMATION SOURCE: KERN76

ACRONYM: REALIGNMENT SYS, TITLE: COBOL REALIGNMENT SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 790000
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: 3,100 STATEMENTS
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE THROUGH FREDERAL SOFTWARE EXCHANGE, FSWEC-79/0114
TOOL SUMMARY: COBOL PROGRAMS ARE OFTEN DIFFICULT AND TIME-CONSUMING TO DEBUG AND/OR MAINTAIN DUE TO THE LACK OF READABILITY. THIS IS ESPECIALLY TRUE WHEN THERE ARE NESTED IF-ELSE STATEMENTS WITHOUT CLEAR AND CONSISTENT INDENTATION OR WHEN THER ARE SEVERAL DIFFERENT STYLES OF RECORD DESCRIPTIONS. THE COBOL REALIGNMENT SYSTEM SOLVES THIS PROBLEM BY REALIGNING A COBOL PROGRAM INTO A MORE READABLE AND STANDARD FORM. THE INPUT TO THE SYSTEM IS A COBOL SOURCE PROGRAM WHICH HAS BEEN COMPILED WITH NO ERRORS. THE OUTPUT IS A REALIGNED SOURCE PROGRAM.
REFERENCES: [FSEC80], GENERAL SERVICES ADMINISTRATION/NATIONAL TECHNICAL INFORMATION SERVICE, "FEDERAL SOFTWARE EXCHANGE CATALOG", GSA/ADTS/C-80/1,

PB80-904001, 800100
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, 703-756-2610
INFORMATION SOURCE: FEDERAL SOFT EXCHANGE CATALOG

ACRONYM: REFER, TITLE: REFER PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE REFER PROGRAM OPERATES ON COMPILER-PRODUCED DATA TO AUTOMATICALLY PRODUCE CROSS-REFERENCE MAPS OF SUBROUTINE USAGE AND HIERARCHICAL DISPLAYS OF SUBROUTINE CALLING STRUCTURES. SINCE THIS DATA IS NOT NORMALLY PRODUCED BY VENDOR-SUPPLIED OPERATING SYSTEMS, REFER CAN BE USED EXTENSIVELY FOR PROGRAM ANALYSIS AND DOCUMENTATION.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: CLARK LUCAS, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0426
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: REFLECT II, TITLE: REFLECT II
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, RESOURCE UTILIZATION, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): SVS, OS/VS, OS/MVS, OS/MVT
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: REFLECT II MONITORS THE EXECUTION OF USER PROGRAMS AND MEASURES PROGRAM PERFORMANCE. IT CONSISTS OF TWO MAJOR COMPONENTS: A MONITOR PROGRAM AND A REPORT GENERATOR. THE MONITOR PROGRAM OVERSEES THE EXECUTION OF A USER PROGRAM. IT ISSUES TIMER INTERRUPT REQUESTS AND, AT EACH INTERRUPT, MAKES AN ENTRY IN A TRACE FILE THAT RECORDS THE STATE OF THE USER PROGRAM. THE REPORT GENERATOR READS THE TRACE FILE AND PRODUCES REPORTS THAT SUMMARIZE THE SAMPLING DATA COLLECTED BY THE MONITOR. THE MOST SIGNIFICANT OF THESE REPORTS IS A HISTOGRAM, WHICH CLEARLY DEPICTS THE DISTRIBUTION OF CPU TIME UTILIZATION WITHIN A

PROGRAM. REFLECT II IS DESIGNED TO PROVIDE THE INFORMATION NEEDED TO QUICKLY LOCATE AND ELIMINATE COSTLY BOTTLENECKS IN COMPUTER PROGRAMS WRITTEN IN ANY LANGUAGE. WITHOUT REQUIRING RELINKING OR MODIFICATION, THE SYSTEM GENERATES A RESOURCE UTILIZATION PROFILE OF THE PROGRAM. THE PROFILE CLEARLY IDENTIFIES THOSE PORTIONS OF THE PROGRAM THAT SHOULD BE OPTIMIZED IN ORDER TO REDUCE EXECUTION COSTS SUBSTANTIALLY.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: CACI, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: REFORM, TITLE: FORTRAN REFORMATTING PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, STRUCTURE CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: REFORM IS AN AUTOMATED TOOL FOR USE IN THE DEVELOPMENT AND MAINTENANCE OF CONSISTENT FORTRAN CODE. REFORM IMPROVES THE QUALITY OF SOFTWARE THROUGH THE APPLICATION OF A CLEAR, WELL-DEFINED SET OF FORTRAN SOFTWARE DESIGN CRITERIA. THIS PROGRAM DOES NOT SIMPLY REPORT DISCREPANCIES, BUT WILL RESTRUCTURE CODE TO COMPLY WITH GIVEN RULES WITHOUT MANUAL INTERACTION. REFORMATTED CODE EXECUTES EXACTLY THE SAME AS ORIGINAL CODE BUT IS GREATLY ENHANCED IN FORM AND LOGICAL STRUCTURE. REFORM INSURES THAT: 1) ALL CODE IS STRUCTURALLY CONSISTENT. 2) ALL VARIABLE SPECIFICATION STATEMENTS ARE COMBINED AND ALPHABETIZED. 3) THE IMPLIED HIERARCHY OF ARITHMETIC AND LOGICAL OPERATORS IS EXPLICITLY SHOWN BY WAY OF SELECTIVE SPACING. (4) STATEMENT LABELS ARE IN ASCENDING ORDER (5) LOOPS ARE INDENTED TO SHOW THE NESTING LEVELS. (6) COMMENTS ARE FORMATTED TO IMPROVE READABILITY. (7) BLANK COMMENTS ARE ADDED TO EMPHASIZE BLOCK STRUCTURE.
DOCUMENTATION: CAPABILITIES BRIEFING
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPT.
CONTACT: P. W. BOGLE, TRW, SOFTWARE TECHNOLOGY DEPT., ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: REFTRAN (TM), TITLE: THE REFTRAN (TM) SOFTWARE TOOL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, FORTRAN IV, FORTRAN 77, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,

STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 670000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: GENERAL RESEARCH CORPORATION
TOOL SUMMARY: REFTRAN (TM) PRODUCES A COMPREHENSIVE CROSS-REFERENCE DICTIONARY OF SYMBOLIC NAMES FROM FORTRAN SOURCE PROGRAMS. THIS DICTIONARY PROVIDES ANALYSTS AND PROGRAMMERS WITH A DEPTH OF DOCUMENTATION HERTOFORE UNAVAILABLE, AND IS AN INVALUABLE AID IN THE EVERYDAY TASKS OF UNDERSTANDING, CHANGING, DEBUGGING, DOCUMENTING, AND CONVERTING FORTRAN PROGRAMS. THE REFTRAN DICTIONARY IS ORGANIZED ALPHABETICALLY BY SYMBOLIC NAME AND SHOWS THE ACTUAL FORTRAN STATEMENT IN WHICH THE SYMBOLIC NAME APPEARS ALONG WITH THE NAME OF THE PROGRAM UNIT IN WHICH THE STATEMENT APPEARS. AN OUTSTANDING FEATURE OF REFTRAN (TM) IS THE CAPABILITY OF INCLUDING SELECTED FORTRAN 'KEYWORDS' SUCH AS DATA, READ, WRITE, FORMAT, ENTRY, CALL, RETURN, AND STOP AS SYMBOLIC NAMES IN THE DICTIONARY.
DOCUMENTATION: USER'S MANUAL, PROGRAMMER'S MANUAL
DEVELOPER: WILLIAM R. DE HAAN
CONTACT: WILLIAM R. DE HAAN, GENERAL RESEARCH CORP, 5383 HOLLISTER AVE, PO BOX 6770, SANTA BARBARA, CA, 93111, USA, 805-964-7724
INFORMATION SOURCE: PRODUCT ANNOUNCEMENT

ACRONYM: REL MEAS MODEL, TITLE: RELIABILITY MEASUREMENT MODEL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, STATISTICAL ANALYSIS, RELIABILITY ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL PORTABLE: YES
TOOL AVAILABLE: YES
TOOL SUMMARY: MEAN-TIME-TO-FAILURE (MTTF) IS A USEFUL METRIC FOR CHARACTERIZING SYSTEM OPERATION AND FOR CONTROLLING CHANGE DURING THE MAINTENANCE PHASE. AN AUTOMATED MODEL HAS BEEN DEVELOPED USING A NUMBER OF FUNDAMENTAL EQUATION WHICH RELATE FAILURES EXPERIENCE, PRESENT MTTF, MTTF OBJECTIVE, AND TIME REQUIRED TO MEET THE MTTF OBJECTIVE. THE MODEL REQUIRES THE INPUT OF THE EXECUTION TIME INTERVALS BETWEEN EXPERIENCED FAILURES, THE MTTF OBJECTIVE AND A PARAMETER DESCRIBING THE ENVIRONMENT. THE MODEL CAN PROVIDE A QUANTITATIVELY-BASED MECHANISM FOR CHANGE CONTROL IN THE OPERATIONS AND MAINTENANCE PHASE. GENERALLY, THE MTTF WILL DROP AFTER THE INSTALLATION OF SOFTWARE CHANGES AND IMPROVE DURING THE FOLLOWING PERIOD OF ERROR REMOVAL. IF THE MTTF CAN BE TRACKED AND IF MTTF SERVICE OBJECTIVES CAN SET FOR THE SYSTEM, THE MODEL CAN BE USED AS A TOOL FOR THE MANAGEMENT OF SYSTEM MODIFICATIONS. WHEN THE MTTF FALLS BELOW THE SERVICE OBJECTIVE, THE SYSTEM CAN BE FROZEN UNTIL IMPROVEMENT OCCURS.

REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[MUSA00], JOHN D. MUSA, "SOFTWARE RELIABILITY MEASURES APPLIED TO SYSTEM ENGINEERING", PROCEEDINGS AFIPS CONFERENCE, VOLUME 48, AFIPS PRESS, 0
DEVELOPER: BELL LABORATORIES, WHIPPANY, NEW JERSEY
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: RENAME, TITLE: RENAME
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, EDITING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM REPLACES A SET OF UP TO 200 VARIABLE NAMES WITHIN A FORTRAN PROGRAM WITH OTHER NAMES. THE PRIMARY USE OF THIS PROGRAM IS THE STANDARDIZATION OF VARIABLE NAMES IN A GROUP OF ROUTINES.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: BRUNSWICK DEFENSE DIV.
CONTACT: JAMES N. CHURCHYARD, BRUNSWICK DEFENSE DIV., 3333 HARBOR BLVD., COSTA MESA, CA, 92626, USA, 714-546-8030
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: RISOS TOOLS, TITLE: RISOS TOOLS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, ASSEMBLY LANGUAGE, USER OUTPUT, GRAPHICS, FLOW CHARTS, TABLES, STATIC ANALYSIS, CROSS REFERENCE, STATISTICAL ANALYSIS, PROFILE GENERATION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 760300
IMPLEMENTATION LANGUAGE: FORTRAN CDC
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
PUBLIC DOMAIN: YES
TOOL SUMMARY: THE RISOS TOOLS WERE DEVELOPED BY THE RESEARCH IN SECURED OPERATING SYSTEMS (RISOS) PROJECT AT LAWRENCE LIVERMORE LABORATORY. THESE TOOLS WERE DEVELOPED TO ANALYZE ASSEMBLY LANGUAGE PROGRAMS AND CONSIST OF THE FOLLOWING THREE ANALYTIC TOOLS: (1) SAP (STATISTICAL ANALYSIS PROGRAM) COUNTS ALL OCCURRENCES OF SPECIFIED SYMBOLS WITHIN A GIVEN MODULE, (2) SPAM (SOURCE PROGRAM ALTERATION MODULE) IDENTIFIES THE CONTROL FLOW IN A MODULE BY INSERTING COMMENTS PRIOR TO STATEMENTS THAT ARE BRANCHED TO AND STATEMENTS THAT CAUSE A BRANCH, AND (3) CRISP (CROSS REFERENCE INTERFACE AND SEARCH PROGRAM) IS A CHARACTER STRING PROCESSING ROUTINE THAT LOCATES INSTRUCTION PATTERNS BY MODULE AND LINE NUMBER. THE RISOS TOOLS HAVE THE DRAWBACK THAT THEY REQUIRE FOUR FILES TO WORK PROPERLY. IN ORDER TO CREATE THESE FILES, THE USER MUST EITHER USE AN

AVAILABLE PARSER OR MODIFY A PROTOTYPE PARSER FOR THE ASSEMBLY LANGUAGE THAT IS BEING ANALYZED.
DOCUMENTATION: TECHNICAL DESCRIPTION
REFERENCES: [CHIN75], CHIN, J. S., "ANALYTIC TOOLS THAT AID IN THE TEST AND EVALUATION OF OS SECURITY", LAWRENCE LIVERMORE LABORATORY, REPT. UCRL-76434, 750000
[WEBB75], WEBB, D.A., ET. AL., "RISOS ANALYTIC TOOL DESCRIPTION MANUAL, PART 2: PROGRAM SOURCE LISTINGS", LAWRENCE LIVERMORE LABORATORY, REPT. UCRL-51810 PT. 2, 750500
[FRIC75], FRICKEL, W. G. , ET. AL., "RISOS ANALYTIC TOOL DESCRIPTION MANUAL, PART 1: PROGRAM DESCRIPTION", LAWRENCE LIVERMORE LABORATORY, REPT. UCRL-51810 PT. 1, 750500
DEVELOPER: LAWRENCE LIVERMORE LABORATORY
INFORMATION SOURCE: FRIC75

ACRONYM: RTT, TITLE: REQUIREMENTS TRACING TOOL
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, DATA INPUT, VHLL INPUT, REQUIREMENTS SPECIFICATION, MACHINE OUTPUT, DATA OUTPUT, USER OUTPUT, GRAPHICS, HIERARCHICAL TREE, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20
TOOL SUMMARY: RTT IS A TOOL TO SUPPORT THE AUTOMATED TRACEABILITY OF PROJECT REQUIREMENTS. THIS TOOL ALSO AIDS IN THE IDENTIFICATION OF SYSTEMS AREAS AFFECTED BY SPECIFICATION CHANGES AND SUPPORTS TEST PLANNING ACTIVITIES. THE TOOL BUILDS A HIERARCHICAL REQUIREMENTS DATA BASE FROM USER INPUTS WHICH ARE MANUALLY EXTRACTED FROM APPROPRIATE DOCUMENTATION. THESE INPUTS INCLUDE A STATEMENT OF THE REQUIREMENT, ASSIGNMENT OF HIERARCHICAL LEVEL, UNIQUE IDENTIFICATION AND KEYWORD ASSIGNMENT. RTT PROVIDES THE CAPABILITY TO MERGE THE INPUTS FROM SEVERAL USERS INTO A MASTER DATA BASE AFTER PROVIDING FORMAT ERROR CHECKING. RTT GENERATES USER SELECTABLE OUTPUT REPORTS SUCH AS MASTER REQUIREMENTS LISTINGS, LISTINGS BY KEYWORD, CROSS REFERENCE LISTINGS BY KEYWORDS, ROOT AND DERIVED REQUIREMENTS, AND INDEXES TO SOURCE DOCUMENTS.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: SAI COMSYSTEMS
CONTACT: J. MILLER, SAI COMSYSTEMS, 2801 CAMINO DEL RIO SOUTH, SAN DIEGO, CA, 93152, USA, 714-293-7500
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: RXVP80 (TM), TITLE: A SOFTWARE ANALYSIS AND TESTING TOOL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, IFTRAN, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, RESTRUCTURING, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT,

SOURCE CODE OUTPUT, FORTRAN, IFTRAN, USER OUTPUT, DIAGNOSTICS, GRAPHICS, TABLES, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, INTERFACE ANALYSIS, CROSS REFERENCE, COMPLEXITY MEASUREMENT, COMPLETENESS CHECKING, CONSISTENCY CHECKING, UNITS ANALYSIS, TYPE ANALYSIS, STATISTICAL ANALYSIS, MANAGEMENT, ERROR CHECKING, STRUCTURE CHECKING, SCANNING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, ASSERTION CHECKING, SYMBOLIC EXECUTION, TUNING, TRACING, CONSTRAINT EVALUATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES, TOOL SIZE: 50K WORDS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE
TOOL SUPPORTED: YES, TOOL SUPPORT: GENERAL RESEARCH CORP.
TOOL SUMMARY: RXVP80 IS A SYSTEM OF TOOLS WHICH PERFORM A NUMBER OF FUNCTIONS SUCH AS DOCUMENTATION, ANALYSIS, AND TEST ASSISTANCE, FOR CODE WRITTEN IN COMMON DIALECTS OF FORTRAN INCLUDING FORTRAN 77. THE HEART OF THE SYSTEM IS A LIBRARY CAPABLE OF STORING THE RESULTS OF ANALYSIS OF VERY LARGE PROGRAMS (>100,000 SOURCE LINES). THE SYSTEM PERFORMS MUCH OF ITS ANALYSIS ON AN INTERNAL REPRESENTATION OF THE PROGRAM AS A DIRECTED GRAPH. ONE OF THE PRIMARY FEATURES OF RXVP80 IS ITS ABILITY TO ANALYZE ONLY THE NEW OR CHANGED MODULES OF A PROGRAM, USING THE STORED LIBRARY TO CHECK INTERFACES.
DOCUMENTATION: USERS MANUAL
DEVELOPER: GENERAL RESEARCH CORPORATION
CONTACT: WILLIAM R. DEHAAN, GENERAL RESEARCH CORP, 5383 HOLLISTER AVE, PO BOX 6770, SANTA BARBARA, CA, 93111, USA, 805-964-7724
INFORMATION SOURCE: TOOL FAIR

ACRONYM: S-FORTRAN, TITLE: S-FORTRAN
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, SEL 32, CDC 6X00/7X00, UNIVAC 11XX
TOOL SUMMARY: THE S-FORTRAN LANGUAGE, DEVELOPED BY CAINE, FARBER GORDON, INC., IS AN EXTENSION OF FORTRAN WHICH ALLOWS EASY, EFFICIENT AND RELIABLE STRUCTURE PROGRAMMING IN A FORTRAN ENVIRONMENT. THE LANGUAGE RESULTS FROM THE ADJUNCTION OF A CAREFULLY CHOSEN SET OF CONTROL STRUCTURES TO EXISTING FORTRAN. THE S-FORTRAN LANGUAGE IS IMPLEMENTED USING AN S-FORTRAN TO FORTRAN TRANSLATOR. THE PURPOSE OF THE TRANSLATOR IS TO LIST THE INPUT PROGRAMS AUTOMATICALLY INDENTED, SCAN FOR POSSIBLE ERRORS AND PRINT APPROPRIATE DIAGNOSTIC, AND PRODUCE EQUIVALENT FORTRAN PROGRAMS THAT

CAN SUBSEQUENTLY BE COMPILED AND EXECUTED.
DOCUMENTATION: LANGUAGE REFERENCE GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: CAINE, FARBER GORDON, INC.
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SADAT, TITLE: STATIC AND DYNAMIC ANALYSIS AND TEST
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN 66, TRANSFORMATION, INSTRUMENTATION, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION, AUDITING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, SYMBOLIC EXECUTION, TUNING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780000
IMPLEMENTATION LANGUAGE: PL/1
COMPUTER (OTHER HARDWARE): IBM 360/370, IBM 3033
TOOL AVAILABLE: YES
TOOL SUMMARY: SADAT IS AN EXPERIMENTAL TEST SYSTEM FOR STATIC AND DYNAMIC ANALYSIS OF SINGLE FORTRAN-MODULES. ADDITIONALLY IT GENERATES A COVERING SET OF PATHS THROUGH THE PROGRAM AND COMPUTES THE CORRESPONDING PATH PREDICATES. CURRENTLY THE PATH PREDICATES ARE NOT SIMPLIFIED NOR ARE CONTRADICTIONS RECOGNIZED.
DOCUMENTATION: USER MANUAL (11), INSTALLATION INSTRUCTION (15)
REFERENCES: [VOGE79], U. VOGES, L. GMEINER AND A. AMSCHLER VON MAYRHAUSER, "SADAT - AN AUTOMATED TESTING TOOL", IEEE-TSE, 790000
[AMSC77], A. AMSCHLER, L. GMEINER, "SADAT2 - BENUTZERHANDBUCH", KFK-EXT. 13/77-02, 770200
[GMEI78], L. GMEINER, "DYNAMIC ANALYSIS AND TEST DATA GENERATION IN AN AUTOMATIC TEST SYSTEM", WORKSHOP ON RELIABLE SOFTWARE, 780922
[SEIF], M. SEIFERT, "SADAT-EIN SYSTEM ZUR AUTOMATISCHEN DURCHFUHRUNG UND ANSWERTUNG VON TESTS", KFK-EXT. 13/75-05, 750500
DEVELOPER: KERNFORSCHUNGSZENTRUM KARLSRUHE GMBH
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SALSIM, TITLE: SALSIM
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, CODE INPUT, FORTRAN, VHLL INPUT, SPECIFICATION LANGUAGE, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN IV
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL SUMMARY: SALSIM SOFTWARE ENABLES A USER TO CONSTRUCT A SIMULATION PROGRAM USING A SPECIAL HIGHER-ORDER LANGUAGE (CALLED LOGICAL CONTROL CHAIN-LCC- LANGUAGE) FOR

DISCRETE-EVENT SIMULATION, TOGETHER WITH FORTRAN AS REQUIRED TO COMPLETE THE SIMULATION. THE SALSIM EXECUTIVE RELATES THE LCC LANGUAGE TO FORTRAN SUBROUTINES IN THE SALSIM PACKAGE. SALSIM OPERATION RESULTS IN A FORTRAN SIMULATION PROGRAM WHICH CAN BE COMPILED AND EXECUTED IN THE NORMAL MANNER. THE REAL POWER OF SALSIM IS IN PERMITTING A USER TO RAPIDLY CONSTRUCT A REASONABLY PRECISE DISCRETE- EVENT SIMULATION OF A SYSTEM. SINCE A WIDE VARIETY OF THE SYSTEM PROBLEMS WHICH MUST BE ADDRESSED BY SOFTWARE DESIGNERS ARE OF THE DISCRETE-EVENT VARIETY, SALSIM HAS COME INTO INCREASING USE IN TRW. FOR EXAMPLE, A REAL TIME SOFTWARE SYSTEM WHICH MUST PROCESS QUEUED INPUT MESSAGE TRAFFIC IS IN MANY RESPECTS A DISCRETE-EVENT SYSTEM. A SIMULATION CAN BE USED TO GAIN INSIGHT INTO A NUMBER OF CRITICAL QUESTIONS ABOUT A PROPOSED OR ACTUAL SYSTEM.
DOCUMENTATION: USER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
CONTACT: DENNIS TOWNSEND, TRW, ONE SPACE PARK, REDONDO BEACH, CA, 90728, USA, 213-535-1945
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SAP, TITLE: SOURCE ANALYZER PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, STATIC ANALYSIS, STATISTICAL ANALYSIS, PROFILE GENERATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN
TOOL SIZE: CORE: 120K
COMPUTER (OTHER HARDWARE): DEC PDP-11 (DISK: 80K)
OS (OTHER SOFTWARE): RSX-11
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM IS DESIGNED TO EXTRACT QUANTITATIVE INFORMATION PERTAINING TO A GIVEN FORTRAN SUBROUTINE OR FUNCTION. THE INFORMATION CONSISTS OF SUCH THINGS AS NUMBER OF SOURCE LINES, NUMBER OF COMMENTS, NUMBER OF DO LOOPS, NUMBER OF GO TO'S, LEVEL OF SUBSCRIPTING USED, ETC. THE INTENT OF THE TOOL IS TO SUPPORT THE CAPABILITY OF COMPUTING BASIC PROGRAM MEASURES OR EVALUATING WHETHER STATIC CONSTRAINTS HAVE BEEN MET IN A GIVEN MODULE.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: NASA/GODDARD SPACE FLIGHT CENTER
CONTACT: F. E. MCGARRY, NASA/GODDARD SPACE FLIGHT CENTER, CODE 582.1, GREENBELT, MD, 20771, USA, 301-344-5048
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SAP/H, TITLE: SOURCE ANALYZER PROGRAM/HALSTEAD
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, STATIC ANALYSIS, COMPLEXITY MEASUREMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN
TOOL SIZE: CORE: 133K
COMPUTER (OTHER HARDWARE): DEC PDP-11 (DISK: 90K)
OS (OTHER SOFTWARE): RSX-11
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS IS AN EXTENSION OF THE SAP SUPPORT UTILITY. IT IS DESIGNED TO USE THE STATIC INFORMATION OF A FORTRAN SUBROUTINE OR FUNCTION (PROVIDED BY SAP) AND GENERATE VARIOUS SETS OF COMPLEXITY MEASURES AND HALSTEAD PARAMETERS (SUCH AS PROGRAM LENGTH, PROGRAM VOLUME, ETC.). THE COMPLEXITY MEASURES ARE BASED ON MCCABES DEFINITION OF COMPLEXITY AND ALSO CONTAIN A LOCAL (TO GSFC) CATEGORIZATION OF EACH SUBROUTINE INTO ONE OF SIX CATEGORIES.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: NASA/GODDARD SPACE FLIGHT CENTER
CONTACT: F. E. MCGARRY, NASA/GODDARD SPACE FLIGHT CENTER, CODE 582.1, GREENBELT, MD, 20771, USA, 301-344-5048
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SARA, TITLE: SYSTEM ARCHITECT'S APPRENTICE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, SL1, GMB, BNF, TRANSFORMATION, TRANSLATION, RESTRUCTURING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, DATA OUTPUT, PROMPTS, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, ON-LINE ASSISTANCE, GRAPHICS, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE, COMPLETENESS CHECKING, CONSISTENCY CHECKING, STRUCTURE CHECKING, SCANNING, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PL/1
TOOL PORTABLE: NO, TOOL SIZE: 25000 LINES OF PL/1 SOURCE
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): MULTICS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: NO
TOOL SUMMARY: SARA (SYSTEM ARCHITECTS' APPRENTICE) IS A COMPUTER-AIDED DESIGN SYSTEM, CURRENTLY UNDER DEVELOPMENT AT UCLA, WHICH SUPPORTS A STRUCTURED MULTI-LEVEL DESIGN METHODOLOGY FOR THE DESIGN OF HARDWARE OR SOFTWARE SYSTEMS. IT COMPRISES A NUMBER OF LANGUAGE PROCESSORS AND TOOLS FOR ASSISTING DESIGNERS USING THE SARA METHODOLOGY, TOGETHER WITH A USER-INTERFACE CAPABILITY FOR ASSISTING DESIGNERS USING THE SARA SYSTEM. THE SARA SYSTEM IS IMPLEMENTED ON THE MIT MULTICS SYSTEM AND IS READILY ACCESSIBLE THROUGH ARPANET OR TELENET.

REFERENCES: [ESTR78], ESTRIN, G., "A METHODOLOGY FOR DESIGN OF DIGITAL SYSTEMS - SUPPORTED BY SARA, AGE: 1", PROCEEDINGS OF THE NCC, 780600
[RAZO80], RAZOUK, R. AND G. ESTRIN, "MODELING AND VERIFICATION OF COMM PROTOCOLS IN SARA: X.21 INTERFACE", IEEE TRANSACTIONS ON COMPUTERS, 801200
[PENE81], PENEDO, M. H., ET AL., "AN ALGORITHM TO SUPPORT CODE-SKELETON GENERATION FOR CONCURRENT SYSTEMS", PROCEEDINGS OF ICSE5, 810300
DEVELOPER: UCLA
CONTACT: G. ESTRIN, UNIVERSITY OF CALIFORNIA, COMPUTER SCIENCE DEP, BOELTER HALL 3732, LOS ANGELES, CA, 90024, USA, 213-825-8878
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SARA-H, TITLE: SARA-H
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, ACTIVITY DIAGRAM, TABLES, STATIC ANALYSIS, STATISTICAL ANALYSIS, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 54K
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: THE SARA (SYSTEM ANALYSIS AND RESOURCE ACCOUNTING) SYSTEMS ENABLE USERS TO MEASURE COMPUTER SYSTEM CAPACITY AND ESTABLISH REASONABLE PRODUCTION PERFORMANCE STANDARDS. SARA-H IS DESIGNED FOR USE WITH HONEYWELL COMPUTERS. THE PRIMARY INPUT SOURCE FOR SARA-H IS HONEYWELL'S STATISTICAL COLLECTION FILE (SCF). THE SYSTEM PROCESSES THE RAW SCF DATA, ANALYZES IT AGAINST PRE-ESTABLISHED STANDARDS, AND OUTPUT VARIOUS ANALYSIS REPORT THE SYSTEMS PRODUCES THE FOLLOWING REPORTS: GENERAL SYSTEM OVERVIEW REPORTS, TOP-DOWN MANAGEMENT REPORTS, JOB MIX CHARACTERISTICS AND RESOURCE UTILIZATION, PERFORMANCE INDICATORS, GRAPHICAL DATA DISPLAYS SHOWING RESOURCE DISTRIBUTIONS, AND EXCEPTION REPORTS. SARA-H ALSO PROVIDES REPORTS ON TSS ACTIVITY. A GENERAL-PURPOSE REPORT WRITER AND A MANAGEMENT REPORTING SYSTEM ARE AVAILABLE AS OPTIONS.
DEVELOPER: BOEING COMPUTER SERVICES
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SARA-III, TITLE: SARA-III
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 160K

SARA-III

COMPUTER (OTHER HARDWARE): IBM 360/370, AMDAHL 470
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE SARA (SYSTEMS ANALYSIS AND RESOURCE ACCOUNTING) PACKAGES ARE COMPUTER CAPACITY MANAGEMENT TOOLS. THE SARA III PROVIDES COMPREHENSIVE REPORTS DESCRIBING JOB MIX CHARACTERISTICS AND SYSTEM BEHAVIOR AT EACH LEVEL OF MULTIPROGRAMMING. THE REPORTS ASSIST THE USER IN SETTING STANDARDS FOR LEVELS OF BATCH AND TSO PERFORMANCE AND PROVIDE THE NECESSARY VISIBILITY FOR PERFORMANCE CONTROL. THE SYSTEM PRODUCES APPLICATION ANALYSIS REPORTS THAT ANALYZE AND EVALUATE JOBS, STEPS, AND PROGRAMS. IN ADDITION, SARA III PRODUCES GRAPHIC DISPLAYS SHOWING PEAK AND NOMINAL SYSTEM PERFORMANCE LEVELS, USER ANALYSIS REPORTS SHOWING THE IMPACT OF USERS ON THE DATA PROCESSING ENVIRONMENT, AND SHIFT ANALYSIS REPORTS THAT REPORT SYSTEM ACTIVITY BY USER-DEFINED SHIFTS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: BOEING COMPUTER SERVICES, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SARA-IV, TITLE: SARA-IV
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 200-700K
COMPUTER (OTHER HARDWARE): IBM 360/370, AMDAHL 470
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE SARA (SYSTEMS ANALYSIS AND RESOURCE ACCOUNTING) PACKAGES ARE COMPUTER CAPACITY MANAGEMENT TOOLS. SARA IV IS DESIGNED TO ADDRESS THOSE PROBLEMS UNIQUE TO MVS. SARA IV INCLUDES ALL OF THE FEATURES OF SARA III PLUS MF/I AND RMF ANALYSIS CAPABILITIES. SARA IV ACCEPTS MF/I AND RMF RECORD AND PREPARES THEM FOR PROCESSING BY THE SARA REPORT WRITER.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: BOEING COMPUTER SERVICES, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SARA-U, TITLE: SARA-U
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,

SARA-U

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): EXEC 8
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: THE SARA (SYSTEM ANALYSIS AND RESOURCE ACCOUNTING) SYSTEMS ENABLE USERS TO MEASURE COMPUTER SYSTEM CAPACITY AND ESTABLISH REASONABLE PRODUCTION PERFORMANCE STANDARDS. SARA-U IS DESIGNED FOR USE WITH THE UNIVAC COMPUTERS. THE PRIMARY INPUT SOURCE FOR SARA-U IS UNIVAC'S MASTER LOG FILE (MLF) AS ITS INPUT SOURCE. THE SYSTEM PROCESS THE RAW MLF DATA, ANALYZE IT AGAINST PRE-ESTABLISHED STANDARDS, AND OUTPUT VARIOUS ANALYSIS REPORTS. THE SYSTEM PRODUCES THE FOLLOWING REPORTS: GENERAL SYSTEM OVERVIEW REPORTS, TOP-DOWN MANAGEMENT REPORTS, JOB MIX CHARACTERISTICS AND RESOURCE UTILIZATION, PERFORMANCE INDICATORS, GRAPHICAL DATA DISPLAYS SHOWING RESOURCE DISTRIBUTIONS, AND EXCEPTION REPORTS. A GENERAL PURPOSE REPORT WRITER AND A MANAGEMENT REPORTING SYSTEM ARE AVAILABLE AS OPTIONS.
DEVELOPER: BOEING COMPUTER SERVICES
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SCAN/370, TITLE: SCAN/370
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, DIAGNOSTICS, GRAPHICS, HIERARCHICAL TREE, TABLES, LISTINGS, STATIC ANALYSIS, COMPARISON, CROSS REFERENCE, STRUCTURE CHECKING, DYNAMIC ANALYSIS, SIMULATION, TUNING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780901
IMPLEMENTATION LANGUAGE: COBOL, ALC
TOOL PORTABLE: NO, TOOL SIZE: 10,000 STATEMENTS
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/VS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: GROUP OPERATIONS, INCORPORATED
TOOL SUMMARY: SCAN/370 IS AN INNOVATIVE ANALYSIS TOOL DESIGNED TO SPEED THE DEVELOPMENT AND MAINTENANCE OF COBOL PROGRAMS AND IMPROVE OPERATIONAL RELIABILITY. SCAN/370 USES AN ADVANCED SIMULATION TECHNIQUE WHICH ANALYZES THE SOURCE CODE AND WALKS THROUGH EVERY POSSIBLE PROCESSING PATH WHICH CAN OCCUR DURING THE PROGRAM'S EXECUTION. THE INFORMATION THAT IS GATHERED DURING THIS WALK-THROUGH PROCESS IS NOT DATA DEPENDENT AND, HENCE, COVERS EVERY POSSIBLE PROCESSING CONDITION. SCAN/370 INTERSPERSES CLEAR AND CONCISE NARRATIVE COMMENTS THROUGHOUT THE PROCEDURE DIVISION OF THE COMPILE LISTING TO PROVIDE CRITICAL ANALYSIS INFORMATION AS AN INTEGRAL PART OF THE PROGRAMMER'S WORKING DOCUMENT. SCAN/370 BACKS UP ITS NARRATIVE COMMENTS IN THE SOURCE LISTING WITH A COMPLETE

BUT CONCISE HIERARCHICAL TRACE OF EVERY PATH ENCOUNTERED DURING THE SIMULATION PROCESS. SCAN/370'S EXCEPTION REPORTS PROVIDE AN EARLY WARNING SYSTEM WHICH HIGHLIGHTS SPECIFIC EVENTS WHICH COULD ADVERSELY AFFECT THE PROGRAM'S EXECUTION.
DOCUMENTATION: USER'S GUIDE, IMPLEMENTATION GUIDE
DEVELOPER: GROUP OPERATIONS, INCORPORATED
CONTACT: H. W. MORGAN, GROUP OPERATIONS, INCORPORATED, 1110 VERMONT AVE, NW, WASHINGTON, DC, 20005, USA, 202-887-5420
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SCERT, TITLE: SCERT
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: CORE: 150K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL SUMMARY: SCERT IS A COMPUTER SYSTEM SIMULATION PACKAGE DESIGNED TO SIMULATE ALMOST ANY WORKING ENVIRONMENT, INCLUDING REAL-TIME, VIRTUAL STORAGE, TIME-SHARING, MULTIPROGRAMMING, MULTIPROCESSING, DATA BASE MANAGEMENT, AND DATA COMMUNICATIONS. BASICALLY, SCERT UTILIZES HIGHLY DETAILED DESCRIPTIONS OF CONFIGURATIONS AND APPLICATIONS PROGRAMMING SPECIFICATIONS, AND BREAKS THEM DOWN INTO INDIVIDUAL PROCESSING EVENTS. THEN FROM THE WORKLOAD DEFINITION AND THE FACTOR LIBRARY, TIMING AND UTILIZATION INFORMATION IS COMPUTED FOR EQUIPMENT COMPONENTS AND FOR CONTROL SOFTWARE SUCH AS OPERATING SYSTEMS AND/OR INPUT/OUTPUT CONTROL ROUTINES, THEREBY PROVIDING DETAILED THROUGHPUT INFORMATION REGARDING TOTAL SYSTEM PERFORMANCE.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: PERFORMANCE SYSTEMS, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SCG, TITLE: STRUCTURE CHART GRAPHICS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, RESTRUCTURING, USER OUTPUT, GRAPHICS, STRUCTURE CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): AMDAHL 470 (HP2647A OR HP2648A GRAPHICS TERMINAL, CALCOMP PLOTTER), DEC VAX-11 (HP2647A OR HP2648A GRAPHICS TERMINAL, CALCOMP PLOTTER)
OS (OTHER SOFTWARE): OS/MVS (PLOT-10, ADBMS)
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO

RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): HUGHES PROPRIETARY
TOOL SUPPORTED: NO
TOOL SUMMARY: THE STRUCTURE CHART GRAPHICS SUBSYSTEM (SCG) WAS DEVELOPED TO SOLVE THE FOLLOWING FUNDAMENTAL SOFTWARE DESIGN PROBLEM: ALTHOUGH EFFECTIVE DESIGN GUIDELINES HAVE BEEN ESTABLISHED WHICH REDUCE THE OVERALL LIFE CYCLE COST OF SOFTWARE, CONSISTENT AND THOROUGH APPLICATION OF THESE GUIDELINES ACROSS ALL DEVELOPMENT EFFORTS IS HAMPERED BY A LENGTHY TECHNOLOGY TRANSFER TIME AND THE RARE AVAILABILITY OF EXPERT DESIGNERS. THE SCG IS A FIRST GENERATION FEASIBILITY DEMONSTRATION OF AN APPROACH WHICH ADDRESSES THIS PROBLEM. THE USER INTERACTS WITH SCG THROUGH A GRAPHICS TERMINAL USING DESIGN COMMANDS SUCH AS 'PLACE A MODULE', CONNECT TWO MODULES', AND USING GRAPHICS COMMANDS SUCH AS 'JUMP TO MODULE X', REPOSITION SUBTREE TO (X,Y)'. HAVING CAPTURED HIS DESIGN IN A DATA BASE, THE USER CAN REQUEST EITHER PAGE-SIZED CALCOMP COPIES OR WALL CHARTS OF HIS ENTIRE DESIGN.
DOCUMENTATION: USERS MANUAL
DEVELOPER: HUGHES AIRCRAFT COMPANY
CONTACT: JAMES W. WINCHESTER, HUGHES AIRCRAFT COMPANY, POST OFFICE BOX 3310, FULLERTON, CA, 92634, USA, 714-732-3232
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SCG/DQM, TITLE: STRUCTURE CHART GRAPHICS/DESIGN QUALITY METRICS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: STANDARDS ENFORCEMENT, TEST DATA GENERATION, PROGRAM STRUCTURE CHECKING, SOFTWARE QUALITY EVALUATION, SUBJECT, CODE INPUT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE, COMPLEXITY MEASUREMENT, CONSISTENCY CHECKING, AUDITING, MANAGEMENT, CHANGE CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780600
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE:250KB
COMPUTER (OTHER HARDWARE): DEC PDP-11, AMDAHL 470 (DISK: 1MB)
OS (OTHER SOFTWARE): TSO, OS/MVS
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AGREEMENT REQUIRED.
TOOL SUPPORTED: YES, TOOL SUPPORT: HUGHES AIRCRAFT CO.
TOOL SUMMARY: SCG PROVIDES AN INTERACTIVE GRAPHICS INTERFACE FOR DEVELOPING, MODIFYING AND DOCUMENTING SOFTWARE DESIGN STRUCTURE CHARTS DEVELOPED UNDER THE STRUCTURED DESIGN METHODOLOGY ORIGINALLY PROPOSED BY L. CONSTANTINE IN 1974. DQM USES THE SCG DATA BASE TO ESTABLISH MEASURES OF QUALITY FOR STRUCTURED DESIGNS; IN PARTICULAR, PLOTS OF COMPLEXITY AND TREE PURITY AS A FUNCTION OF TREE DEPTH, FAN IN AND FAN OUT INFORMATION, AND MEASURES OF THE TESTABILITY/MODIFIABILITY OF A DESIGN. AN AUTOMATIC LAYOUT FEATURE HAS JUST BEEN COMPLETED WHICH RESTRUCTURES A

SARA-III

COMPUTER (OTHER HARDWARE): IBM 360/370, AMDAHL 470
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE SARA (SYSTEMS ANALYSIS AND RESOURCE ACCOUNTING) PACKAGES ARE COMPUTER CAPACITY MANAGEMENT TOOLS. THE SARA III PROVIDES COMPREHENSIVE REPORTS DESCRIBING JOB MIX CHARACTERISTICS AND SYSTEM BEHAVIOR AT EACH LEVEL OF MULTIPROGRAMMING. THE REPORTS ASSIST THE USER IN SETTING STANDARDS FOR LEVELS OF BATCH AND TSO PERFORMANCE AND PROVIDE THE NECESSARY VISIBILITY FOR PERFORMANCE CONTROL. THE SYSTEM PRODUCES APPLICATION ANALYSIS REPORTS THAT ANALYZE AND EVALUATE JOBS, STEPS, AND PROGRAMS. IN ADDITION, SARA III PRODUCES GRAPHIC DISPLAYS SHOWING PEAK AND NOMINAL SYSTEM PERFORMANCE LEVELS, USER ANALYSIS REPORTS SHOWING THE IMPACT OF USERS ON THE DATA PROCESSING ENVIRONMENT, AND SHIFT ANALYSIS REPORTS THAT REPORT SYSTEM ACTIVITY BY USER-DEFINED SHIFTS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: BOEING COMPUTER SERVICES, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SARA-IV, TITLE: SARA-IV
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE: 200-700K
COMPUTER (OTHER HARDWARE): IBM 360/370, AMDAHL 470
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: THE SARA (SYSTEMS ANALYSIS AND RESOURCE ACCOUNTING) PACKAGES ARE COMPUTER CAPACITY MANAGEMENT TOOLS. SARA IV IS DESIGNED TO ADDRESS THOSE PROBLEMS UNIQUE TO MVS. SARA IV INCLUDES ALL OF THE FEATURES OF SARA III PLUS MF/I AND RMF ANALYSIS CAPABILITIES. SARA IV ACCEPTS MF/I AND RMF RECORD AND PREPARES THEM FOR PROCESSING BY THE SARA REPORT WRITER.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: BOEING COMPUTER SERVICES, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SARA-U, TITLE: SARA-U
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,

SARA-U

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
OS (OTHER SOFTWARE): EXEC 8
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: THE SARA (SYSTEM ANALYSIS AND RESOURCE ACCOUNTING) SYSTEMS ENABLE USERS TO MEASURE COMPUTER SYSTEM CAPACITY AND ESTABLISH REASONABLE PRODUCTION PERFORMANCE STANDARDS. SARA-U IS DESIGNED FOR USE WITH THE UNIVAC COMPUTERS. THE PRIMARY INPUT SOURCE FOR SARA-U IS UNIVAC'S MASTER LOG FILE (MLF) AS ITS INPUT SOURCE. THE SYSTEM PROCESS THE RAW MLF DATA, ANALYZE IT AGAINST PRE-ESTABLISHED STANDARDS, AND OUTPUT VARIOUS ANALYSIS REPORTS. THE SYSTEM PRODUCES THE FOLLOWING REPORTS: GENERAL SYSTEM OVERVIEW REPORTS, TOP-DOWN MANAGEMENT REPORTS, JOB MIX CHARACTERISTICS AND RESOURCE UTILIZATION, PERFORMANCE INDICATORS, GRAPHICAL DATA DISPLAYS SHOWING RESOURCE DISTRIBUTIONS, AND EXCEPTION REPORTS. A GENERAL PURPOSE REPORT WRITER AND A MANAGEMENT REPORTING SYSTEM ARE AVAILABLE AS OPTIONS.
DEVELOPER: BOEING COMPUTER SERVICES
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SCAN/370, TITLE: SCAN/370
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, DIAGNOSTICS, GRAPHICS, HIERARCHICAL TREE, TABLES, LISTINGS, STATIC ANALYSIS, COMPARISON, CROSS REFERENCE, STRUCTURE CHECKING, DYNAMIC ANALYSIS, SIMULATION, TUNING, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780901
IMPLEMENTATION LANGUAGE: COBOL, ALC
TOOL PORTABLE: NO, TOOL SIZE: 10,000 STATEMENTS
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/VS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: GROUP OPERATIONS, INCORPORATED
TOOL SUMMARY: SCAN/370 IS AN INNOVATIVE ANALYSIS TOOL DESIGNED TO SPEED THE DEVELOPMENT AND MAINTENANCE OF COBOL PROGRAMS AND IMPROVE OPERATIONAL RELIABILITY. SCAN/370 USES AN ADVANCED SIMULATION TECHNIQUE WHICH ANALYZES THE SOURCE CODE AND WALKS THROUGH EVERY POSSIBLE PROCESSING PATH WHICH CAN OCCUR DURING THE PROGRAM'S EXECUTION. THE INFORMATION THAT IS GATHERED DURING THIS WALK-THROUGH PROCESS IS NOT DATA DEPENDENT AND, HENCE, COVERS EVERY POSSIBLE PROCESSING CONDITION. SCAN/370 INTERSPERSES CLEAR AND CONCISE NARRATIVE COMMENTS THROUGHOUT THE PROCEDURE DIVISION OF THE COMPILE LISTING TO PROVIDE CRITICAL ANALYSIS INFORMATION AS AN INTEGRAL PART OF THE PROGRAMMER'S WORKING DOCUMENT. SCAN/370 BACKS UP ITS NARRATIVE COMMENTS IN THE SOURCE LISTING WITH A COMPLETE

BUT CONCISE HIERARCHICAL TRACE OF EVERY PATH ENCOUNTERED DURING THE SIMULATION PROCESS. SCAN/370'S EXCEPTION REPORTS PROVIDE AN EARLY WARNING SYSTEM WHICH HIGHLIGHTS SPECIFIC EVENTS WHICH COULD ADVERSELY AFFECT THE PROGRAM'S EXECUTION.
DOCUMENTATION: USER'S GUIDE, IMPLEMENTATION GUIDE
DEVELOPER: GROUP OPERATIONS, INCORPORATED
CONTACT: H. W. MORGAN, GROUP OPERATIONS, INCORPORATED, 1110 VERMONT AVE, NW, WASHINGTON, DC, 20005, USA, 202-887-5420
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SCERT, TITLE: SCERT
CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: CORE: 150K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL SUMMARY: SCERT IS A COMPUTER SYSTEM SIMULATION PACKAGE DESIGNED TO SIMULATE ALMOST ANY WORKING ENVIRONMENT, INCLUDING REAL-TIME, VIRTUAL STORAGE, TIME-SHARING, MULTIPROGRAMMING, MULTIPROCESSING, DATA BASE MANAGEMENT, AND DATA COMMUNICATIONS. BASICALLY, SCERT UTILIZES HIGHLY DETAILED DESCRIPTIONS OF CONFIGURATIONS AND APPLICATIONS PROGRAMMING SPECIFICATIONS, AND BREAKS THEM DOWN INTO INDIVIDUAL PROCESSING EVENTS. THEN FROM THE WORKLOAD DEFINITION AND THE FACTOR LIBRARY, TIMING AND UTILIZATION INFORMATION IS COMPUTED FOR EQUIPMENT COMPONENTS AND FOR CONTROL SOFTWARE SUCH AS OPERATING SYSTEMS AND/OR INPUT/OUTPUT CONTROL ROUTINES, THEREBY PROVIDING DETAILED THROUGHPUT INFORMATION REGARDING TOTAL SYSTEM PERFORMANCE.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: PERFORMANCE SYSTEMS, INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SCG, TITLE: STRUCTURE CHART GRAPHICS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, RESTRUCTURING, USER OUTPUT, GRAPHICS, STRUCTURE CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): AMDAHL 470 (HP2647A OR HP2648A GRAPHICS TERMINAL, CALCOMP PLOTTER), DEC VAX-11 (HP2647A OR HP2648A GRAPHICS TERMINAL, CALCOMP PLOTTER)
OS (OTHER SOFTWARE): OS/MVS (PLOT-10, ADBMS)
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO

RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): HUGHES PROPRIETARY
TOOL SUPPORTED: NO
TOOL SUMMARY: THE STRUCTURE CHART GRAPHICS SUBSYSTEM (SCG) WAS DEVELOPED TO SOLVE THE FOLLOWING FUNDAMENTAL SOFTWARE DESIGN PROBLEM: ALTHOUGH EFFECTIVE DESIGN GUIDELINES HAVE BEEN ESTABLISHED WHICH REDUCE THE OVERALL LIFE CYCLE COST OF SOFTWARE, CONSISTENT AND THOROUGH APPLICATION OF THESE GUIDELINES ACROSS ALL DEVELOPMENT EFFORTS IS HAMPERED BY A LENGTHY TECHNOLOGY TRANSFER TIME AND THE RARE AVAILABILITY OF EXPERT DESIGNERS. THE SCG IS A FIRST GENERATION FEASIBILITY DEMONSTRATION OF AN APPROACH WHICH ADDRESSES THIS PROBLEM. THE USER INTERACTS WITH SCG THROUGH A GRAPHICS TERMINAL USING DESIGN COMMANDS SUCH AS 'PLACE A MODULE', CONNECT TWO MODULES', AND USING GRAPHICS COMMANDS SUCH AS 'JUMP TO MODULE X', REPOSITION SUBTREE TO (X,Y)'. HAVING CAPTURED HIS DESIGN IN A DATA BASE, THE USER CAN REQUEST EITHER PAGE-SIZED CALCOMP COPIES OR WALL CHARTS OF HIS ENTIRE DESIGN.
DOCUMENTATION: USERS MANUAL
DEVELOPER: HUGHES AIRCRAFT COMPANY
CONTACT: JAMES W. WINCHESTER, HUGHES AIRCRAFT COMPANY, POST OFFICE BOX 3310, FULLERTON, CA, 92634, USA, 714-732-3232
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SCG/DQM, TITLE: STRUCTURE CHART GRAPHICS/DESIGN QUALITY METRICS
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: STANDARDS ENFORCEMENT, TEST DATA GENERATION, PROGRAM STRUCTURE CHECKING, SOFTWARE QUALITY EVALUATION, SUBJECT, CODE INPUT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, TABLES, STATIC ANALYSIS, CROSS REFERENCE, COMPLEXITY MEASUREMENT, CONSISTENCY CHECKING, AUDITING, MANAGEMENT, CHANGE CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 780600
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: CORE:250KB
COMPUTER (OTHER HARDWARE): DEC PDP-11, AMDAHL 470 (DISK: 1MB)
OS (OTHER SOFTWARE): TSO, OS/MVS
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AGREEMENT REQUIRED.
TOOL SUPPORTED: YES, TOOL SUPPORT: HUGHES AIRCRAFT CO.
TOOL SUMMARY: SCG PROVIDES AN INTERACTIVE GRAPHICS INTERFACE FOR DEVELOPING, MODIFYING AND DOCUMENTING SOFTWARE DESIGN STRUCTURE CHARTS DEVELOPED UNDER THE STRUCTURED DESIGN METHODOLOGY ORIGINALLY PROPOSED BY L. CONSTANTINE IN 1974. DQM USES THE SCG DATA BASE TO ESTABLISH MEASURES OF QUALITY FOR STRUCTURED DESIGNS; IN PARTICULAR, PLOTS OF COMPLEXITY AND TREE PURITY AS A FUNCTION OF TREE DEPTH, FAN IN AND FAN OUT INFORMATION, AND MEASURES OF THE TESTABILITY/MODIFIABILITY OF A DESIGN. AN AUTOMATIC LAYOUT FEATURE HAS JUST BEEN COMPLETED WHICH RESTRUCTURES A

HIERARCHY OF MODULES INTO WELL FORMED DIAGRAMS. A TEST PLAN GENERATION PROGRAM BASED ON THE STRUCTURE IS NOW BEING IMPLEMENTED.
DOCUMENTATION: USER MANUAL (50)
REFERENCES: [WILL78E], R. WILLIS, "DAS - AN AUTOMATED SYSTEM TO SUPPORT DESIGN ANALYSIS", PROC. 3RD INTERNATIONAL CONFERENCE ON SOFTWARE ENG., ATLANTA, 780600
CONTACT: RON WILLIS, HUGHES AIRCRAFT COMPANY, P.O. BOX 3310, FULLERTON, CA, 92634, USA, 714-732-1488
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SCHEMACODE, TITLE: AUTOMATED SCHEMATIC PSEUDOCODE FOR GENERAL SOFTWARE DEVELOPMENT
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, TEXT INPUT, VHLL INPUT, SCHEMATIC PSEUDOCODE, TRANSFORMATION, EDITING, RESTRUCTURING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPLEXITY MEASUREMENT, MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: 150 K
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUPPORTED: YES, TOOL SUPPORT: ECOLE POLYTECHNIQUE DE MONTREAL
TOOL SUMMARY: SCHEMACODE IS A SOFTWARE PACKAGE RUNNING ON AN IBM 360. THE TERMINAL (VT-100 COMPATIBLE) MAKES IT INTERACTIVE. THE PRIMARY TASK OF SCHEMACODE IS TO ASSIST USERS IN THE DEVELOPMENT, DOCUMENTATION AND STRUCTURED CODING OF PROGRAMS. IT USUALLY TRANSMITS THE SOURCE PROGRAM TO THE MAIN COMPUTER FOR EXECUTION. IN THE DEVELOPMENT PHASE OF A PROJECT THE SCHEMATIC PSEUDOCODE IS OUTPUT AT THE GRAPHIC PRINTER, WHILE IN THE CODING PHASE, THE STRUCTURED LISTING CAN BE OUTPUT. ONCE THE NEED OR THE TASK TO BE PERFORMED BY SOFTWARE IS CORRECTLY DEFINED, THE SYSTEM ANALYST ENTERS THE MAIN CONTROL STRUCTURES AT THE TERMINAL. THIS FIRST STEP IS CALLED REFINEMENT 0. THE FIRST OR ANY SUBSEQUENT REFINEMENT CAN CONTAIN UP TO 10 STRUCTURES. THIS LIMIT IS NOT RESTRICTIVE. IT RATHER APPEARS AS A WAY TO FORCE A TOP-DOWN APPROACH.
DEVELOPER: UNIV OF MONTREAL
CONTACT: PIERRE N. ROBILLARD, DEPT OF EE, ECOLE POLYTECHNIQUE, BOX 6079, STATION A, MONTREAL, 83C3A7, CANADA, 514-344-4711
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SCOBOL (TM), TITLE: SCOBOL (TM)
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, COBOL, SCOBOL, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS,

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, SCOBOL
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE CONSULTING SERVICES
TOOL SUMMARY: SCOBOL IS A PROGRAMMING LANGUAGE FOR STRUCTURED PROGRAMMING. IT IS A SUPERSET OF COBOL. IT GIVES YOU EVERYTHING THAT COBOL DOES PLUS THE CONTROL STRUCTURES YOU NEED FOR STRUCTURED CODING. THE CENTRAL PART OF THE SCOBOL SYSTEM IS A PRECOMPILER PROGRAM. IT READS A PROGRAM THAT YOU HAVE WRITTEN IN THE SCOBOL LANGUAGE AND TRANSLATES IT INTO A COBOL PROGRAM READY TO BE COMPILED BY YOUR COMPILER. A PROGRAMMER'S MOST IMPORTANT TOOL IS HIS PROGRAMMING LANGUAGE. IT AFFECTS NOT ONLY THE WAY HE CODES BUT THE WAY HE THINKS ABOUT A PROBLEM. SCOBOL MAKES IT POSSIBLE FOR PROGRAMMERS TO WRITE CORRECT PROGRAMS USING THE PROPER CONTROL STRUCTURES OF STRUCTURED PROGRAMMING WITHOUT THE LABORIOUS AND ERROR-PRONE HAND TRANSLATION REQUIRED TO DO THIS IN COBOL.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: SOFTWARE CONSULTING SERVICES
CONTACT: MARTHA J. CICHELLI, SOFTWARE CONSULTING SERVICES, 910 WHITTIER DRIVE, ALLENTOWN, PA, 18103, USA, 215-797-9690
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: SCOPE, TITLE: SCOPE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, CICS, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/VS, DOS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUMMARY: SCOPE IS A CICS PROGRAM GENERATOR THAT ENABLES COBOL PROGRAMMERS WITH MINIMAL OR NO CICS TRAINING TO CODE CICS APPLICATION PROGRAMS. THE SYSTEM GENERATES COMPLETE COBOL-CICS SOURCE PROGRAMS AND ASSOCIATED SCREEN MAPPINGS FROM A SIMPLE INPUT LANGUAGE. CONVERSATION BETWEEN THE TERMINAL OPERATOR AND THE PROGRAM IS HANDLED STEP BY STEP TO REDUCE CPU LOADS AND RESPONSE TIME. SCOPE OBTAINS AND RELEASES MAIN STORAGE AND DISK SPACE AS NECESSARY. IT PROVIDES FOR BASE ADDRESSES, MAPPING SUPPORT, DUMMY SECTIONS, ETC. EXTENSIVE DOCUMENTATION IS PROVIDED. SCOPE ALSO INCLUDES AN INTERACTIVE DEBUGGING FEATURE CALLED TRACE.

DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: DATACHREN CORPORATION
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SDDL, TITLE: SOFTWARE DESIGN AND DOCUMENTATION LANGUAGE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, SDDL, TRANSFORMATION, FORMATTING, USER OUTPUT, LISTINGS, STRUCTURED LISTINGS, STATIC ANALYSIS, SCANNING, KEY WORD SCANNING, STRUCTURE SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
TOOL PORTABLE: YES
COMPUTER (OTHER HARDWARE): DEC VAX-11
OS (OTHER SOFTWARE): VMS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM COSMIC
TOOL SUPPORTED: NO
TOOL SUMMARY: SDDL IS A LANGUAGE AND ASSOCIATED PROCESSOR THAT IS ORIENTED TOWARD SUPPORTING SOFTWARE DETAILED DESIGN. THE SDDL PROCESSOR ACCEPTS AN INPUT OF A FILE OF SOURCE STATEMENTS, STRUCTURES THESE SOURCE STATEMENTS ACCORDING TO THE GENERAL RULES OF STRUCTURED PROGRAMMING, AND PRODUCES VARIOUS REPORTS INCLUDING A STRUCTURED LIST OF THE ORIGINAL SOURCE STATEMENTS. ONE OF ITS MAJOR FEATURES IS THE ABILITY TO SELECT KEYWORDS THAT ARE APPROPRIATE FOR THE APPLICATION OF THE USER. THE PROPOSED SCENARIO WOULD ALLOW AN ICSC ATTENDEE TO CREATE A VERY BRIEF INPUT FILE AND THEN HAVE THIS INPUT FILE PROCESSED AND THE OUTPUT RETURNED TO THE ATTENDEE THROUGH A HARD COPY TERMINAL. THE ONLY CONSTRAINT WOULD BE THE SIZE OF THE INPUT FILE.
DOCUMENTATION: REFERENCE GUIDE
REFERENCES: [CALL80], CALLENDER, CLARKSON, AND FRASIER, "AN APPLICATION OF SDDL", JPL REPORT 80-16, 800000
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: BARRY COOPER, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-354-6159
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SDL, TITLE: SOFTWARE DESIGN LANGUAGE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, TRANSFORMATION, FORMATTING, USER OUTPUT, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS

TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF MICHIGAN
TOOL SUMMARY: SDL IS A DESIGN LANGUAGE FOR DEFINING THE DESIGN STRUCTURE OF A SOFTWARE SYSTEM. SDL WITH ASSOCIATED SOFTWARE DESIGN ANALYZER (SDA) PROVIDES AUTOMATED SUPPORT TO AID IN THE LOGIC AND ACCURACY DESIGN PRIOR TO IMPLEMENTATION OR PROGRAMMING CONSIDERATIONS. FIRST THE OBJECT IS DEFINED, WITH UNIQUE NAMES FROM ALLOWABLE TYPES SUCH AS SUBSYSTEMS, MODULE, OPERATORS, COLLECTION OF DATA, ETC. NEXT THE RELATIONSHIP AMONG THE OBJECTS IS DEFINED FROM ALLOWABLE TYPES SUCH AS REFERENCES, COMPOSED OF, HAS SUBPARTS, ETC. THE USER ALSO ATTACHES INFORMATION TO EACH OBJECT IN THE FORM OF COMMENT ENTRIES OR VALUES OF SPECIFIC PROPERTIES. THE SDA ADDS (UPDATES) NEW OBJECTS TO THE DATA BASE AND ADDS RELATIONS, ATTRIBUTES, PROPERTIES AND TEXT AS SPECIFIED. SDA PROVIDES A LISTING OF THE INPUT SPECIFICATION AND A FORMATTED LISTING WITH CROSS-REFERENCE INFORMATION.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
[HERS78], E.A. HERSHEY, Y. YAMAMOTO, B. WATERMAN, "THE SOFTWARE DEVELOPMENT FACILITY", ISDOS REF. 7800-0214-0, 780900
DEVELOPER: UNIVERSITY OF MICHIGAN
CONTACT: E. HERSHEY, UNIVERSITY OF MICHIGAN, ANN ARBOR, MI, 48109, USA, 313-763-2238
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: SDP, TITLE: SOURCE DIRECTORY PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, VERSION CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: ONE OF THE PROBLEMS ENCOUNTERED DURING THE DEVELOPMENT AND MAINTENANCE OF A LARGE SCALE SOFTWARE SYSTEM IS ACCURATELY DETERMINING THE CURRENT SOFTWARE CONFIGURATION. THIS INVOLVES THE IDENTIFICATION OF EACH ACCOUNTABLE ELEMENT IN THE SYSTEM (SUBROUTINE, MODULE, PROGRAM, DATA BASE ENTRY, ETC.) AND ITS CURRENT MODIFICATION LEVEL. ALTHOUGH FREQUENTLY DONE BY HAND, THIS IDENTIFICATION PROCESS CAN EASILY TAKE ON MAMMOTH PROPORTIONS AS THE NUMBER OF IDENTIFIABLE ENTITIES GROWS INTO THE HUNDREDS AND THE THOUSANDS. THE SOURCE DIRECTORY PROGRAM WAS WRITTEN TO AUTOMATE THE IDENTIFICATION OF EACH SUBROUTINE IN THE CUR- RENT SYSTEM CONFIGURATION. THE PRINTED OUTPUT PROVIDES THE PROJECT WITH A CONCISE ACCURATE RECORD OF EACH ROUTINE NAME, CURRENT VERSION NUMBER (MODIFICATION LEVEL), DOCUMENT NUMBER (CORRESPONDING TO THE SOURCE LISTING) AND NUMBER OF CARDS IN THE ROUTINE. EVERY PROJECT HAS TO REPORT THIS DATA IN SOME FORM. THIS PROGRAM

PROVIDES AN AUTOMATED WAY TO RETRIEVE AND MAINTAIN THIS INFORMATION.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT
CONTACT: CLARK LUCAS, TRW, DEFENSE SYSTEMS SOFTWARE DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-0426
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SDP/MAYDA, TITLE: A TOOL FOR SYSTEM DESIGN AND MAINTENANCE
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, TRANSFORMATION, FORMATTING, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, HIERARCHICAL TREE, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, STRUCTURE CHECKING, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN 66
TOOL PORTABLE: YES, TOOL SIZE: 64 KB
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE
TOOL SUPPORTED: YES, TOOL SUPPORT: MAYDA SOFTWARE ENGINEERING
TOOL SUMMARY: SDP IS A VERY HIGH LEVEL LANGUAGE (VHLL) THAT APPLIES SOFTWARE ENGINEERING METHODOLOGIES SUCH AS TOP-DOWN DESIGN, STRUCTURED DESIGN, AND DATA ABSTRACTION TO THE DESIGN OF SYSTEMS. THE DESIGNER EXPRESSES HIS IDEAS IN A STRUCTURED ENGLISH-LIKE LANGUAGE. SDP PRODUCES DOCUMENTS WHICH DISPLAY HIS DESIGN IN A CLEAR AND READABLE MANNER SO THAT ALL THOSE INVOLVED CAN EASILY UNDERSTAND THE SOLUTION. SDP FORMATS THE DESIGN MODULES, PROVIDING FULL CROSS-REFERENCING OF THE MODULES AND DATA ITEMS, AND A TREE REPRESENTING THE HIERARCHICAL SEQUENCE OF REFERENCING (CALLING TREE). IN ADDITION, SDP PROVIDES A MECHANISM FOR DESIGNING THE CONTROL OF SYNCHRONIZATION BETWEEN PROCESSES. ADDITIONAL FEATURES INCLUDE TEXT MODULES, INCLUSION OF EXTERNAL MODULES, INTERFACE DEFINITION, USER DEFINED KEYWORDS, AND PARAMETERIZED MODULE NAMES. SDP PERFORMS SEVERAL CONSISTENCY CHECKS ON THE DESIGN SUCH AS PROPER USE OF CONTROL PRIMITIVES.
DOCUMENTATION: TECHNICAL PAPER, PROGRAMMER'S GUIDE
DEVELOPER: MAYDA SOFTWARE ENGINEERING
CONTACT: MAYDA SOFTWARE ENGINEERING, PO BOX 1389, REHOVOT, 76113, ISRAEL, 054-58534
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SDVS, TITLE: SOFTWARE DESIGN AND VERIFICATION SYSTEM

CLASSIFICATION: SOFTWARE MODELING AND SIMULATION
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, COBOL, ASSEMBLY, JOVIAL J73
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20
TOOL SUMMARY: SDVS IS AN INTEGRATED SOFTWARE SYSTEM TO SUPPORT DESIGN, CODING, TEST AND MAINTENANCE OF DIGITAL AVIONICS INFORMATION SYSTEM (DAIS) MISSION SO SOFTWARE (PROTOTYPE OFP). IT PROVIDES THE FOLLOWING CAPABILITIES: A SIMULATION OF THE DAIS PROCESSORS AND DATA BUS FOR DEVELOPING MISSION SOFTWARE WITHOUT USING THE ACTUAL HARDWARE; AUTOMATED CONFIGURATION MANAGEMENT OF MISSION SOFTWARE; AUTOMATIC CONTROL OF SIMULATION RUNS; EDITING AND PROCESSING OF DATA GENERATED BY THE SIMULATION; A SIMPLE, EASY USER LANGUAGE WHICH ALLOWS THE SOFTWARE DEVELOPER, THE TEST ENGINEER, AND THE PROJECT MANAGER TO COMMUNICATE WITH THE SYSTEM.
DOCUMENTATION: SYSTEM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SOFTWARE TECHNOLOGY DEPT
CONTACT: HAL HART, TRW SOFTWARE TECHNOLOGY DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-1781
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SEF, TITLE: SOFTWARE ENGINEERING FACILITY
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, DOCUMENTATION, STATIC ANALYSIS, INTERFACE ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, TEST DATA MANAGEMENT, LIBRARY MANAGEMENT, GLOBAL VARIABLE MANAGEMENT, DYNAMIC ANALYSIS, REGRESSION TESTING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL SUPPORTED: YES, TOOL SUPPORT: NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA
TOOL SUMMARY: AN SEF CONSISTS OF A SOFTWARE ENGINEERING DATA BASE, STRUCTURED DATA MANAGEMENT SYSTEM (SDMS), STRUCTURED DATA LANGUAGE PROCESSOR (SDLP) AND A SET OF SUBSYSTEMS WHICH PROVIDE SPECIALIZED SUPPORT TO SOFTWARE DEVELOPMENT FUNCTIONS. A PRIMARY OBJECTIVE OF THE SEF IS TO PROVIDE A CAPABILITY FOR AUTOMATED CAPTURE OF AS MUCH SOFTWARE DEVELOPMENT DATA AS POSSIBLE FOR THE SOFTWARE ENGINEERING DATA BASE. IN ADDITION, THE SEF, THROUGH THE STRUCTURED DATA LANGUAGE, PROVIDES A COMMON PROTOCOL FOR INVOLVING THE SUBSYSTEM PROCESSORS. THESE PROCESSORS MAY BE LINKED DIRECTLY TO THE SEF AS AN "SEF COMPATIBLE PROCESSOR."
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200

[IRVI77], C. A. IRVINE, "AUTOMATED SOFTWARE ENGINEERING THROUGH STRUCTURED DATA MANAGEMENT", IEEE TRANS. ON SOFT. ENG., VOL. SE-3, NO. 1, PP 34-40, 770100
DEVELOPER: NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: SELECT, TITLE: SYMBOLIC EXECUTION LANGUAGE TO ENABLE COMPREHENSIVE TESTING
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, LISP, LISP SUBSET, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, ASSERTION CHECKING, SYMBOLIC EXECUTION, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 740000
IMPLEMENTATION LANGUAGE: LISP
TOOL SUPPORTED: YES, TOOL SUPPORT: STANFORD RESEARCH INSTITUTE
TOOL SUMMARY: SELECT IS A SYMBOLIC EXECUTION TOOL WHICH IS INTENDED TO BE A COMPROMISE BETWEEN AN AUTOMATED PROGRAM PROVING SYSTEM AND AD HOC DEBUGGING PRACTICE EXPERIMENTALLY, SELECT INCLUDES: (A) SEMANTIC ANALYSIS OF PROGRAMS, (B) CONSTRUCTION OF INPUT DATA CONSTRAINTS TO COVER SELECTED PROGRAM PATH, (C) IDENTIFICATION OF (SOME) UNFEASIBLE PROGRAM PATHS, (D) AUTOMATIC DETERMINATION OF ACTUAL (REAL NUMBER) INPUT DATA TO DRIVE THE TEST PROGRAM THROUGH SELECTED PATHS, (E) EXECUTION (ACTUAL OR SYMBOLIC) OF THE TEST PROGRAM WITH OPTIMAL INTERMEDIATE ASSERTIONS AND OUTPUT ASSERTIONS, (F) GENERATION OF SIMPLIFIED EXPRESSIONS FOR THE VALUES OF ALL PROGRAM VARIABLES, IN TERMS OF SYMBOLIC INPUT VALUES, AND (G) PATH ANALYSIS FOR EACH POTENTIALLY EXECUTABLE PATH OR FOR A USER-SELECTED SUBSET OF PATHS. MULTIPLE EXECUTIONS OF A LOOP WITH A PATH ARE DEFINED AS SEPARATE PATHS, PRODUCING A POTENTIALLY INFINITE NUMBER OF DISTINCT PATHS. THE NUMBER OF LOOP TRAVERSALS MAY BE CONSTRAINED BY THE USER.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[BOYE75], R. S. BOYER, "SELECT A FORMAL SYS. FOR TESTING DEBUG. PROG. BY SYMBOLIC EXECUTION", PROCEEDINGS INTER. CONF. ON RELIABLE SOFT. PP 234-245, 750400
DEVELOPER: STANFORD RESEARCH INSTITUTE
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: SFORT-1, TITLE: STRUCTURED FORTRAN PREPROCESSOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN

TOOL SIZE: CORE: 72K
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS IS A TYPICAL STRUCTURED FORTRAN PREPROCESSOR THAT SUPPORTS TWO ADDITIONAL CONSTRUCTS TO THE STANDARD FORTRAN LANGUAGE: DOWHILE, IF THEN ELSE, SUPPORTING STATEMENTS INCLUDING THE ENDDO AND ENDIF AND ARE GENERATED BY THE PRECOMPILER. THIS PREPROCESSOR ALSO PERFORMS FORMATTING, ERROR CHECKING AND REPORTING. THE EXTENT OF EACH IS CONTROLLED BY INPUT PARAMETERS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: NASA/GODDARD SPACE FLIGHT CENTER
CONTACT: F. E. MCGARRY, NASA/GODDARD SPACE FLIGHT CENTER, CODE 582.1, GREENBELT, MD, 20771, USA, 301-344-5048
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SFTRAN3, TITLE: SFTRAN3 STRUCTURED FORTRAN PREPROCESSOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, ERROR CHECKING,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: FORTRAN, STRUCTURED FORTRAN 3
TOOL PORTABLE: YES
TOOL AVAILABLE: NO, PUBLIC DOMAIN: YES
TOOL SUMMARY: TRANSLATES CODE FROM THE SFTRAN3 STRUCTURED PROGRAMMING LANGUAGE TO STANDARD FORTRAN. THE LANGUAGE FEATURES INCLUDE STRUCTURED BRANCHING AND LOOPING, STRUCTURE LABELS, MULTILEVEL STRUCTURE EXITS, PROCEDURES, I/O END-OF-FILE AND ERROR DETECTION, AND DYNAMIC INCLUSION OF NAMED SEGMENTS OF CODE, SUCH AS, TYPE AND COMMON STATEMENTS. THE PREPROCESSOR PRODUCES AN INDENTED LISTING SHOWING THE HIERARCHY OF CONTROL STRUCTURES. EARLIER VERSIONS OF SFTRAN HAVE BEEN IN USE AT JPL SINCE 1973. THE NEW SFTRAN3 PREPROCESSOR IS DESIGNED TO FACILITATE INSTALLATION ON ANY COMPUTER SUPPORTING FORTRAN.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SIGS, TITLE: SAMM INTERACTIVE GRAPHICS SYSTEM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, DESIGN SPECIFICATION, REQUIREMENTS LANGUAGE, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, STATIC ANALYSIS, COMPLETENESS CHECKING,

STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 790100
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: NO, TOOL SIZE: 60,000 WORDS OF MEMORY
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): NOS (PSR LEVELS 433, 460, AND 485)
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): BCS PROPRIETARY PROGRAM, LICENSED FOR USE BY AIR FORCE FOR ICAM PROGRAM
TOOL SUPPORTED: YES, TOOL SUPPORT: AIR FORCE MATERIALS LABORATORY, AFSC, WRIGHT-PATTERSON AFB, OHIO
TOOL SUMMARY: THE SAMM (SYSTEMATIC ACTIVITY MODELING METHOD) INTERACTIVE GRAPHICS SYSTEM (SIGS) PROVIDES A USER WITH A GRAPHICAL APPROACH TO DEFINING THE ACTIVITIES AND DATA FLOW WHICH DESCRIBE SOFTWARE REQUIREMENTS OR DESIGN. SIGS ALSO ALLOWS A USER TO PRODUCE A SET OF REPORTS AND FIGURES DURING THE DESCRIPTION PHASE, IN DOCUMENT FORM AND QUALITY, TO SUMMARIZE THE DATA AND ACTIVITIES WITHIN A SOFTWARE DEVELOPMENT. THE TOOL ALSO AIDS THE USER IN VERIFYING THE SYNTACTIC CORRECTNESS AND DESIGN COMPLETENESS IN A COLLECTION OF DIAGRAMS ACCORDING TO THE CONSTRUCTS OF THE SAMM METHODOLOGY.
DOCUMENTATION: USER MANUAL (50), TECHNICAL DESCRIPTION (200), SYSTEM USERS MANUAL (50)
REFERENCES: [LAMB78], S.S. LAMB, V.G. LECK, L.J. PETERS, G.L. SMITH, "SAMM: A MODELING TOOL FOR REQUIREMENTS AND DESIGN SPECIFICATION", PROCEEDINGS OF COMPSAC '78, 781100
DEVELOPER: BOEING COMPUTER SERVICES COMPANY
CONTACT: BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346 M/S 9C-03, SEATTLE, WA, 98124, USA, 206-575-5114
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SLIB, TITLE: SOFTWARE LIBRARIAN FACILITY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, TEXT INPUT, CODE INPUT, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, STATIC ANALYSIS, MANAGEMENT, LIBRARY MANAGEMENT, DOCUMENTATION MANAGEMENT, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BASIC PLUS, BASIC PLUS II
COMPUTER (OTHER HARDWARE): DEC PDP-11, DEC VAX-11
OS (OTHER SOFTWARE): VMS, RSTS, RSX-11
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: CLYDE DIGITAL SYSTEMS
TOOL SUMMARY: THE SOFTWARE LIBRARIAN FACILITY (SLIB), IS A SOFTWARE PACKAGE THAT ASSISTS ORGANIZATIONS WHICH PRODUCE AND MAINTAIN A MEDIUM TO LARGE NUMBER OF PROGRAMS AND RELATED DOCUMENTS. SLIB IS USED TO ORGANIZE, DOCUMENT, MAINTAIN, AND CONTROL THE SOFTWARE LIBRARY. SLIB CONTROLS THE VARIOUS STAGES OF PROGRAM DEVELOPMENT. WHEN A PROGRAM'S FUNCTION IS DEFINED, A PROGRAM SPECIFICATION IS CREATED AND ENTERED INTO A COMPUTER FILE. SLIB CONTROLS THE PROCEDURE OF MAINTAINING PROGRAMS WHICH ARE IN THE

SOFTWARE LIBRARY. SLIB CONTROLS DOCUMENTATION STANDARDS. SLIB PROVIDES THE FOLLOWING MANAGEMENT INFORMATION: (1) CONTENTS OF THE SOFTWARE LIBRARY. (2) CURRENT STATUS OF ALL LIBRARY PROGRAMS. (3) DEVELOPMENT AND MAINTENANCE HISTORY OF PROGRAMS. (4) LEVEL OF LIBRARY ACTIVITY OVER TIME PERIODS. (5) LIBRARY CONSISTENCY REPORTS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
DEVELOPER: CLYDE DIGITAL SYSTEMS
CONTACT: JO ANN HETTINGER, CLYDE DIGITAL SYSTEMS, P.O. BOX 348, BEDFORD, MA, 01730, USA, 617-275-6642
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: SLIM, TITLE: SOFTWARE LIFE-CYCLE MANAGEMENT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, BAR CHARTS, LINE GRAPHS, TABLES, SCHEDULES, RISK PROFILES, STATIC ANALYSIS, COST ESTIMATION, SCHEDULING, TIME SCHEDULING, PERSONNEL SCHEDULING, DYNAMIC ANALYSIS, SIMULATION, MONTE CARLO SIMULATION, CONTROL, INTERACTIVE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: BASIC, FORTRAN IV
TOOL PORTABLE: YES, TOOL SIZE: 200K BYTES
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20, HP 85
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE
TOOL SUPPORTED: YES, TOOL SUPPORT: QUANTITATIVE SOFTWARE MANAGEMENT
TOOL SUMMARY: SLIM ESTIMATES THE MANPOWER, COST AND SCHEDULE FOR SOFTWARE PROJECTS. IT PROJECTS THE CASH FLOW OVER THE LIFE CYCLE. IT ACCEPTS LIMITING CONSTRAINTS ON COST, MANPOWER AND SCHEDULE AND USING THE LINEAR PROGRAMMING ALGORITHM IT IDENTIFIES A MINIMUM COST SOLUTION, A MINIMUM TIME SOLUTION, AND ALL OTHER FEASIBLE SOLUTIONS TO THE SOFTWARE DEVELOPMENT PROBLEM. IN ADDITION, SLIM PROVIDES RISK PROJECTIONS FOR COSTS AND SCHEDULES AND PROVIDES A POWERFUL CAPABILITY TO EXPERIMENT WITH TRADE-OFFS BETWEEN COST, DEVELOPMENT TIME AND RISK. SOME VERY LARGE COST SAVINGS ARE USUALLY IDENTIFIED. SLIM DETERMINES THE RATE OF CODE PRODUCTION DURING DEVELOPMENT AND THE AMOUNT OF TEST BED COMPUTER USAGE MONTH-BY-MONTH THROUGHOUT THE DEVELOPMENT AND OPERATIONAL PHASES OF THE SYSTEM LIFE CYCLE. SLIM HAS A BUILT IN CALIBRATION MODULE LETS IT BE TUNED TO THE SPECIFIC DEVELOPMENT ENVIRONMENT (PEOPLE, TOOLS, LANGUAGE, MACHINE, SYSTEM TYPE, ETC.) THAT WILL DO THE SOFTWARE WORK.
DOCUMENTATION: USERS GUIDE
REFERENCES: [PUTN78], PUTNAM, LAWRENCE H., "PROGRESS IN MODELLING THE SOFTWARE LIFE CYCLE...", IEEE COMPUTER SOCIETY PUB. NO. 78CH 1390-4C, PP. 105-128, 780821

DEVELOPER: QUANTITATIVE SOFTWARE MANAGEMENT, INC.
CONTACT: LAWRENCE H. PUTNAM, QUANTITATIVE SOFTWARE MANAGEMENT, INC., 1057 WAVERLEY WAY, MCLEAN, VA, 22101, USA, 703-790-0055
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS, TOOL FAIR

ACRONYM: SMAL/80, TITLE: STRUCTURED MACRO ASSEMBLY LANGUAGE
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, SMAL/80, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, SMAL/80,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY, SMAL/80
TOOL SIZE: CORE: 8K
COMPUTER (OTHER HARDWARE): INTEL 8080/8085
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: THE SMAL/80 PACKAGE CONSISTS OF THE SMAL/80 (STRUCTURED MACRO ASSEMBLY LANGUAGE) COMPILER, A MACRO PREPROCESSOR, AND A MACRO DEFINITION/ TRANSLATOR PROGRAM. SMAL/80 IS A MICROPROCESSOR LANGUAGE THAT FUNCTIONS ON THE LEVEL OF INDIVIDUAL INTEL 8080 AND 8085 MACHINE INSTRUCTION. SMAL/80 INSTRUCTIONS ARE WRITTEN IN A SYMBOLIC, INDENTED NOTATION RESEMBLING THAT OF PASCAL AND PL/M. PROGRAMS ARE NOT RESTRICTED TO A RIGID FORMAT, BUT CAN BE WRITTEN FREE-FORM, WITH INDIVIDUAL STATEMENTS WRITTEN EITHER ON A SINGLE LINE OR OVER SEVERAL LINES. SEVERAL STATEMENTS CAN BE COMBINED INTO A SINGLE COMPLEX STATEMENT. THE COMPILER INCORPORATES THE THREE BASIC STRUCTURED PROGRAMMING CONSTRUCTS: DO-END, IF-THEN-ELSE, AND LOOP-REPEAT. THESE CONSTRUCTS CAN BE COMBINED OR NESTED WITHIN EACH OTHER. THE COMPILER IS DESIGNED TO ENABLE PROGRAMMER TO DEVELOP THE LOGICAL STRUCTURE OF MACHINE-LEVEL PROGRAMS AS IF THEY WERE HIGH-LEVEL PROGRAMS. THE MACRO PREPROCESSOR PERMITS CONDITIONAL EXPANSION OF STATEMENTS AND UNLIMITED NESTING OF MACROS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: CHROMOD ASSOCIATES
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SMMA, TITLE: STRUCTURED MACROS FOR THE MODCOMP ASSEMBLER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, MACHINE OUTPUT, OBJECT CODE OUTPUT,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: ASSEMBLY
COMPUTER (OTHER HARDWARE): MODCOMP
TOOL AVAILABLE: NO, PUBLIC DOMAIN: YES
TOOL SUMMARY: THE STRUCTURED MACROS ARE A SET OF MACROS DEVELOPED TO EXPLICITLY SUPPORT THE CONCEPTS OF STRUCTURED PROGRAMMING. THEY HAVE BEEN USED WITH THE MODCOMP ASSEMBLER AND MAY PRODUCE REENTRANT CODE. THE MACROS ARE IN THE FINAL STAGE OF TESTING.

DOCUMENTATION: USER'S MANUAL
DEVELOPER: JET PROPULSION LABORATORY
CONTACT: SANDY PALACIOS, JET PROPULSION LABORATORY, 4800 OAK GROVE DRIVE, PASADENA, CA, 91109, USA, 213-344-4884
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SMS, TITLE: SOURCE MANAGEMENT SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, MACHINE OUTPUT, SOURCE CODE OUTPUT, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, VERSION CONTROL, CHANGE CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED
PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): RESTRICTED RIGHTS
TOOL SUMMARY: SMS PROVIDES A HIGH DEGREE OF AUTOMATION TO THE PROCESS OF MANAGING LARGE AMOUNTS OF SOFTWARE IN A DEVELOPMENT ENVIRONMENT WHERE THE SOFTWARE IS CONTINUOUSLY CHANGED OR USED BY DIFFERENT USERS UNDER DIFFERENT CIRCUMSTANCES. SMS PROVIDES THE ABILITY TO INCORPORATE CHANGES AND DISTRIBUTE CUSTOMIZED AND UPDATED COPIES OF THE SOFTWARE. SMS ALLOWS THE USER TO BE ONLY CONCERNED WITH THE CHANGES. AT ANY TIME THE SMS DATA BASE CONTAINS A COMPLETE AND CURRENT COPY OF THE SOFTWARE; COMPLETE AND CURRENT INFORMATION ABOUT THE STRUCTURE OF THE SOFTWARE; AND A CHRONOLOGICAL LOG OF ALL CHANGES INTRODUCED SINCE THE CREATION OF THE SMS DATA BASE WITH USER ANNOTATIONS OF REASONS FOR THE CHANGE. SMS PROVIDES A HIGH LEVEL COMMAND LANGUAGE FOR USER CONTROL AND MANIPULATION OF THE SOFTWARE.
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
[HERS78A], E.A. HERSHEY, Y. YAMAMOTO, B. WATERMAN, "SMS USER'S MANUAL", ISDOS REF. 7800-0232, 780900
DEVELOPER: UNIVERSITY OF MICHIGAN
CONTACT: E. HERSHEY, UNIVERSITY OF MICHIGAN, ANN ARBOR, MI, 48109, USA, 313-763-2238
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

ACRONYM: SMT, TITLE: SYSTEM MANAGEMENT TOOL
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, EDITING, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY
TOOL SIZE: CORE: 128K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/VS, OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE

TOOL SUMMARY: SMT IS AN ON-LINE, REAL-TIME SYSTEM TOOL DESIGNED TO AID OPERATIONS, SYSTEMS PROGRAMMING, AND PRODUCTION CONTROL PERSONNEL. THE SYSTEM PROVIDES AN "EARLY WARNING" CAPABILITY THAT NOTIFIES THE USER OF PENDING JOB "TIME-OUTS" AND ALLOWS THE TIME TO BE RESET. SMT PROVIDES REAL-TIME DISPLAYS OF CONTROL BLOCKS, ENTRY POINTS, AND SYSTEM RESOURCES SUCH AS CPU UTILIZATION, CHANNEL UTILIZATION, AND DEVICE ACTIVITY. A TEXT EDITING CAPABILITY AND ON-LINE, MULTI-LEVEL ZAPS ARE ALSO INCLUDED. SMT ENABLES USERS TO FINE-TUNE JOB SCHEDULES TO ENSURE THAT HIGH-PRIORITY JOBS GET THE PROPER PRIORITY WITHIN THE SYSTEM. JOBS ARE SUBMITTED THROUGH AN INTERNAL READER.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: VALUE COMPUTING INC.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SNOOP, TITLE: SNOOP
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, GRAPHICS, FLOW CHARTS, HIPO CHARTS, TABLES, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: SNOOP ACCEPTS AS INPUT UNIVAC DEFENSE SYSTEMS DIVISION'S SOFTWARE DESIGN LANGUAGE. DEPENDING ON COMMAND INPUT BY THE USER, SNOOP GENERATES AN INDENTED LISTING OF THE DESIGN LANGUAGE FOR INPUT TO OTHER GRAPHICS TOOLS. THE GRAPHICS TOOLS INCLUDE FLOWCHART AND HIPO DIAGRAM GENERATION. THE DESIGN LANGUAGE PERMITS DESCRIPTION OF PROPERTIES (E.G. SIZE, STATUS), TEXT (E.G. PURPOSE, DESCRIPTION), RELATIONSHIPS (E.G. USES, INVOKES) AND BEHAVIOR (STRUCTURED NARRATIVES). THE STRUCTURED NARRATIVES CONSIST OF KEYWORDS (LIKE IF, DO AND CASE), ENGLISH AND NAMES OF OTHER PARTS OF THE SOFTWARE. THE STRUCTURED NARRATIVE IS ANALYZED TO GENERATE THE LISTINGS AND GRAPHICS INPUTS. SINCE ITS INTRODUCTION IN THE FALL OF 1978, SNOOP HAS EXECUTED OVER 10,000 COMMAND
DOCUMENTATION: INTERNAL REPORT (52)
CONTACT: J. W. ESCH, SPERRY UNIVAC, P.O. BOX 3525, ST. PAUL, MN, 55165, USA, 612-456-2222
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SOFTOOL 80 (TM), TITLE: A METHODOLOGY AND A COMPREHENSIVE SET OF TOOLS FOR THE 1980'
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, CODE INPUT, VHLL INPUT, TRANSFORMATION, TRANSLATION, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, DOCUMENTATION, TABLES, LISTINGS, STATIC ANALYSIS,

COMPARISON, DATA FLOW ANALYSIS, INTERFACE ANALYSIS, COMPLEXITY MEASUREMENT, COMPLETENESS CHECKING, AUDITING, MANAGEMENT, CONFIGURATION MANAGEMENT, STRUCTURE CHECKING, SCANNING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TUNING, TIMING, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES, TOOL SIZE: 2K - 270K BYTES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PROPRIETARY PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: SOFTOOL 80 IS AN INTEGRATED METHODOLOGY AND SUPPORTING TOOLS FOR SOFTWARE MANAGEMENT, DEVELOPMENT, AND MAINTENANCE. CONCEPTUALLY, SOFTOOL 80 ALLOWS A USER TO INTERACTIVELY CREATE IN AN 'APPLICATION GENERATOR MODE' A SUBSTANTIAL PORTION OF A NEW APPLICATION, TYPICALLY, OVER 50% OF THE REQUIRED CODE. THE USER THEN, WITH THE AID OF AN ELABORATE COLLECTION OF SOFTWARE TOOLS, COMPLETES THE PROGRAM AND GENERATES A DELIVERABLE PRODUCT. THE AREAS SUPPORTED WITH EXISTING TOOLS INCLUDE: STRUCTURED PROGRAMMING AT A LEVEL THAT MATCHES DESIGN DOCUMENTS, EXTENSIVE DIAGNOSTICS, CODE AUDITING, PORTABILITY, DOCUMENTATION, TRACING, TESTING, TIME AND SPACE OPTIMIZATION. MANAGEMENT VISIBILITY, STANDARDS AND QUALITY CONTROL ARE GIVEN EXPLICIT SUPPORT. EXPERIENCE IN THE USE OF SOFTOOL 80, RELEASE 1, INDICATES THAT FIVEFOLD IMPROVEMENTS, OVER CONVENTIONAL APPROACHES, IN THE AMOUNT AND QUALITY OF THE SOFTWARE CREATED ARE READILY ATTAINED.
DOCUMENTATION: TECHNICAL PAPER, REFERENCE MANUALS
CONTACT: SOFTOOL CORPORATION, 340 S. KELLOGG, GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SPC, TITLE: SYSTEM/3 PROJECT CONTROL
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: RPG II
TOOL SIZE: CORE: 12K
COMPUTER (OTHER HARDWARE): IBM SYSTEM 3
OS (OTHER SOFTWARE): SCP
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: PROJECT CONTROL FOR THE SYSTEM/3 MODEL 6 (5798 ADJ) PROVIDES A BASIC TOOL TO AID MANAGEMENT IN THE PLANNING, SUPERVISING, AND CONTROLLING OF PROJECT-ORIENTED WORK BY THE CRITICAL PATH METHOD. THIS METHOD IS A TECHNIQUE TO PLAN, SCHEDULE, SUPERVISE, AND CONTROL ANY PROJECT WHICH IS COMPOSED OF A SERIES OF TIME-RELATED EVENTS. EACH EVENT HAS A TIME DURATION AND A RELATIONSHIP TO OTHER EVENTS WHICH MUST FINISH BEFORE IT CAN START AND

TO EVENTS WHICH CANNOT START UNTIL IT IS FINISHED. A START DATE IS ASSIGNED TO THE FIRST EVENT, PERMITTING START DATES TO BE CALCULATED FOR ALL THE OTHER EVENTS. IN ADDITION TO CRITICAL PATH ANALYSIS, THE SYSTEM PROVIDES THE CAPABILITY FOR SUMMARIZING PREPARED RESOURCE INFORMATION. RESOURCE REPORTING ALLOWS USERS TO DISPLAY THE STATUS OF UP TO FOUR DIFFERENT RESOURCES PER WORK ITEM, COMPARING THE ESTIMATED RESOURCES AGAINST ACTUAL RESOURCES USED. A PROGRESS REPORT SHOWS THE CURRENT STATUS OF ALL WORK ITEMS, DISPLAYING THOSE THAT ARE ON OR BEHIND SCHEDULE.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: IBM
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SPEAR, TITLE: STRUCTURED PROGRAMMING EVALUATION AND AUTOFLOW ROUTINE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J3B-2, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PL/1
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUMMARY: PROCESSES THE JOVIAL J3B-2 LANGUAGE TO PRODUCE FLOW-CHARTS DIRECTLY FROM THE CONTROL STRUCTURES OF THE LANGUAGE. J3B-2 HAS TWO TYPES OF COMMENTS, ONE OF WHICH FLOWCHARTS AND ONE OF WHICH DOES NOT RESULTING IN CORRECT AND READABLE LINE PRINTER PRODUCED FLOWCHARTS. ALSO PROVIDES LIMITED CHECKING FOR STRUCTURED PROGRAMMING CONSTRUCTS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL
DEVELOPER: GENERAL DYNAMICS
CONTACT: L. C. KLOS, GENERAL DYNAMICS, P.O. BOX 748, FORT WORTH, TX, 76101, USA, 817-732-4811
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SPECLE/DARS, TITLE: SPECIFICATION LANGUAGE/DESIGN ANALYSIS AND PEPORTING SYSTEM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, GRAPHICS, DESIGN CHARTS, LISTINGS, STATIC ANALYSIS, COMPLETENESS CHECKING, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
COMPUTER (OTHER HARDWARE): IBM 360/370
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY OUTSIDE OF BCS MAY BE RESTRICTED
TOOL SUPPORTED: YES, TOOL SUPPORT: BOEING COMPUTER SERVICES COMPANY

TOOL SUMMARY: SPECLE/DARS (SPECIFICATION LANGUAGE/DESIGN ANALYSIS AND REPORTING SYSTEM) IS A TOOL WHICH AIDS IN THE DESIGN DEVELOPMENT AND DOCUMENTATION PROCESS. SPECLE IS A DESIGN SPECIFICATION LANGUAGE USED TO DESCRIBE THE DESIGN OF A TARGET SYSTEM. DARS IS A COORDINATED SET OF ANALYSIS REPORT GENERATION PROGRAMS THAT PROCESS THE SPECLE DESCRIPTION OF THE DESIGN. THERE ARE CURRENTLY FOUR TOOLS WHICH MAKE UP THE DARS SYSTEM: (1) GADTR, (2) SAMMDF, (3) LAYOUT, AND (4) SPECDOC. SPECLE/DARS CAN CAPTURE A MODEL OF TARGET SYSTEMS TO ANY LEVEL OF DETAIL. IT CAN THEN PRODUCE A VARIETY OF REPORTS AND GRAPHICS WHICH WILL AID IN DESIGN, COMMUNICATION, AND REVIEW. THE USE OF SPECLE/DARS PROVIDES SEVERAL ADVANTAGES OVER MANUAL TECHNIQUES, INCLUDING: STANDARD DESIGN DESCRIPTIONS, ENFORCE PRECISION OF MEANING, ALLOW AUTOMATED DESIGN VERIFICATION, EASE OF MODIFICATION, AND PROVIDE INCREASED PROGRESS VISIBILITY.
DOCUMENTATION: USERS MANUAL
REFERENCES: [BCSC79], BOEING COMPUTER SERVICES COMPANY, "AUTOMATED SOFTWARE TOOLS CATALOG", BCS 10236, 790800
DEVELOPER: BOEING COMPUTER SERVICES COMPANY
CONTACT: GARY KAMPEN, BOEING COMPUTER SERVICES COMPANY, P.O. BOX 24346, SEATTLE, WA, 98124, USA, 206-575-5393
INFORMATION SOURCE: BCS SOFTWARE TOOLS CATALOG

ACRONYM: SPECTRUM-1, TITLE: A COMPLETE PROJECT MANAGEMENT SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, USER-ORIENTED TEXT, REPORTS, GRAPHICS, STATIC ANALYSIS, MANAGEMENT, CHANGE CONTROL, DOCUMENTATION MANAGEMENT, PROJECT MANAGEMENT, SCHEDULING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SPECTRUM INTERNATIONAL INC.
TOOL SUMMARY: SPECTRUM-1 IS A COMPLETE PROJECT MANAGEMENT SYSTEM THAT CONTAINS AND INTEGRATES THE FOLLOWING FIVE ESSENTIAL ELEMENTS: (1) A MASTER SYSTEMS PLAN THAT DOCUMENTS THE NEW SYSTEM BACKLOG FOR THE NEXT TWO TO FIVE YEARS AND A MANAGEMENT REVIEW BOARD THAT SETS PRIORITIES IN THAT BACKLOG USING STANDARD BUSINESS PROCEDURES. (2) A PROJECT PLANNING AND CONTROL COMPONENT THAT CONTAINS ESTIMATING GUIDELINES, PROCEDURES FOR SCHEDULE PREPARATION AND TIME REPORTING. (3) A SET OF SYSTEM DESIGN GUIDELINES THAT CAUSE NEEDED DESIGN TASKS TO BE PERFORMED IN A REQUIRED SEQUENCE. (4) A CONTROL PROCESS THAT CAUSES DOCUMENTATION TO BE PRODUCED AS A BYPRODUCT OF THE DESIGN EFFORT. (5) A CHANGE CONTROL METHOD THAT ENSURES THAT DOCUMENTATION IS KEPT UP-TO-DATE AND THAT CHANGES ARE THOROUGHLY TESTED BEFORE BEING PLACED INTO PRODUCTION.

DOCUMENTATION: USER'S MANUAL, MANAGER'S MANUAL
DEVELOPER: SPECTRUM INTERNATIONAL INC.
CONTACT: SPECTRUM INTERNATIONAL INC., HEADQUARTER, 4311 WILSHIRE BLVD, SUITE 312, LOS ANGELES, CA, 90010, USA, 213-931-1127
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: SPELL, TITLE: SPELLING CORRECTOR PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, AUDITING, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: SPELL LOCATES POSSIBLE MISSPELLINGS OF VARIABLE NAMES IN THE USER'S SOURCE CODE. SIMPLE ROUTINE LEVEL COMPARISONS ARE MADE OF VARIABLES, PRODUCING A CONCISE LISTING FOR THE QUICK LOCATION OF VARIABLES WHICH RESEMBLE EACH OTHER CLOSELY ENOUGH TO WARRANT EXAMINATION. EACH LOCAL VARIABLE IS COMPARED TO OTHER LOCAL VARIABLES IN THE SAME ROUTINE AND TO ALL GLOBAL VARIABLES IN THE PROGRAM. A POSSIBLE SPELLING ERROR IS ENCOUNTERED WHEN A LOCAL AND A GLOBAL ARE SPELLED IDENTICALLY OR WHEN TWO VARIABLES DIFFER BY THE ADDITION, DELETION, SUBSTITUTION OR TRANSPOSITION OF A CHARACTER. EACH DIFFERENCE IS NOTED AND A COMPLETE LISTING IS PRODUCED BY ROUTINE.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SOFTWARE TECHNOLOGY DEPT
CONTACT: V. Z. SOTIRIOU, TRW SOFTWARE TECHNOLOGY DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SPREAD, TITLE: SPREAD
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, COST ESTIMATION, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: SPREAD IS A COMPUTERIZED TECHNIQUE FOR ESTIMATING AND DISTRIBUTING SOFTWARE DESIGN AND DEVELOPMENT COSTS BASED ON THE NUMBER OF COMPUTER PROGRAM INSTRUCTIONS TO BE DEVELOPED AND THE ESTIMATED COST PER INSTRUCTION. BECAUSE THE INITIAL USE OF THIS TOOL ON A GIVEN PROJECT CORRESPONDS TO THE SIZING AND REQUIREMENTS ANALYSIS OF THE SOFTWARE ROUTINES, THE ASSOCIATED DATA BASE, AND THE SELECTION OF THE HARDWARE CONFIGURATION ON WHICH THE SOFTWARE IS TO BE IMPLEMENTED, SPREAD HELPS CONSIDERABLY IN GAINING CONSISTENCY BETWEEN SOFTWARE DESIGN AND SOFTWARE

COSTS. SPREAD ALSO COMPUTES THE CORRESPONDING MANPOWER LEVELS REQUIRED TO ACCOMPLISH THE DEVELOPMENT EFFORT. TOTAL COSTS AND MANLOADING MAY BE BROKEN DOWN AND SEGREGATED EITHER BY INDIVIDUAL ROUTINES, DEVELOPMENT PHASE SEGMENTS, COSTS TO ACHIEVE A WORK MILESTONE, ACTIVITY, PRICING CATEGORY, WBS ACCOUNT, OR VIRTUALLY ANY COMBINATION THEREOF. ADDITIONALLY, OTHER COST FACTORS SUCH AS COMPUTED HOURS OR OTHER DIRECT COST EXPENDITURES MAY BE NOTED.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
CONTACT: J. E. GREEN, TRW, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-4012
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SPRINT, TITLE: SPRINT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, TRANSFORMATION, RESTRUCTURING, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, TUNING, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: SPRINT PRESENTS A DISCIPLINED APPROACH TO SIZING AND STRUCTURING COMPUTE SOFTWARE SYSTEMS. IT IS DIVIDED INTO THREE FUNCTIONAL MODULES. THESE MODULES ARE: SOFTWARE STRUCTURING--PROCESSES THE SOFTWARE DESCRIPTION DATA TO PRODUCE TWO KINDS OF OUTPUT: USER REPORTS AND SPRINT DATA FILES; RESOURCE ALLOCATION AND TIMING--PROCESSES THE SYSTEM DESCRIPTION DATA TO BUILD THE BASE COMPUTER MODEL. THE SOFTWARE DESCRIPTION DATA IS THEN PROCESSED TO OBTAIN MODULE RUNNING TIMES; SYSTEM LOADING--PRODUCES THE THROUGHPUT LOADING PROFILE BASED UPON THE RUNNING TIME OF EACH MODULE AN THE INPUT SCENARIO, WHICH SPECIFIES THE SCHEDULING OF EACH MODULE. THROUGH THE USE OF PARAMETERIZATION, TRADEOFF STUDIES CAN BE RUN TO FIND THE SENSITIVITY OF THE SYSTEM TO CERTAIN KEY PARAMETERS, THEREBY IDENTIFYING CRITICAL DESIGN PROBLEMS, AND ALSO FINDING THE SYSTEM SATURATION POINT.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
CONTACT: J. E. GREEN, TRW, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-4012
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SPTRAN, TITLE: SPTRAN
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES, TOOL SIZE: CORE: 16,000
TOOL SUPPORTED: YES, TOOL SUPPORT: HONEYWELL
TOOL SUMMARY: THE SPTRAN CONVERTER ALLOWS A USER TO APPLY STRUCTURED PROGRAMMING CONCEPTS BY CODING IN A LANGUAGE THAT HAS THE STRUCTURED AND FREE-FORMAT FEATURES OF PL/I, BUT IS OTHERWISE LIKE FORTRAN. THIS LANGUAGE, CALLED SPTRAN, WAS DESIGNED SUCH THAT IT COMBINES THOSE FEATURES OF FORTRAN AND PL/I MOST OFTEN USED FOR SCIENTIFIC PROGRAMMING APPLICATIONS. FREE-FORM SPTRAN INPUT IS TRANSLATED INTO ANSI FORTRAN AND THE ORIGINAL SPTRAN SOURCE CODE IS RETAINED AS FORTRAN REMARKS. SPTRAN ADVANTAGES ARE DESCRIBED AS FOLLOWS: (1) PROVIDES ACTUAL EXPERIENCE IN ENCODING AND EXECUTING STRUCTURED PROGRAMS, (2) ENABLES TIMELY CREATION OF FORTRAN PROGRAMS, (3) RESULTS IN ANNOTATED PROGRAM LISTINGS THAT ARE EASY TO READ AND CAN SUPPLEMENT DOCUMENTATION, AND (4) PROVIDES EARLY INTRODUCTION TO STRUCTURED CONSTRUCTS AND PRINCIPLES.
DOCUMENTATION: USER MANUAL, INSTALLATION MANUAL
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[ELLI76], I. B. ELLIOTT, "SPTRAN : A FORTRAN-COMPATIBLE STRUCTURED PROGRAMMING LANGUAGE CONVERTER", PROCEEDINGS MRI SYM. ON COMP. SOFT. ENG., NY, NY, PP331-336, 760500
DEVELOPER: HONEYWELL
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: SREM, TITLE: SOFTWARE REQUIREMENTS ENGINEERING METHODOLOGY
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS STATEMENT LANGUAGE, RSL, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, REPORTS, GRAPHICS, LISTINGS, STATIC ANALYSIS, COMPLETENESS CHECKING, CONSISTENCY CHECKING, MANAGEMENT, DATA BASE MANAGEMENT, DYNAMIC ANALYSIS, SIMULATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, PASCAL
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): NO RESTRICTIONS WITHIN THE USA
TOOL SUPPORTED: YES, TOOL SUPPORT: TRW DEFENSE AND SPACE SYSTEMS GROUP, HUNTSVILLE, AL

TOOL SUMMARY: SOFTWARE REQUIREMENTS ENGINEERING METHODOLOGY (SREM) WAS DEVELOPED IN RESPONSE TO CONTINUING, AND INCREASING, DIFFICULTIES IN DEVELOPING COMPLEX, LARGE, REAL-TIME SOFTWARE FOR BALLISTIC MISSILE DEFENSE (BMD) SYSTEMS IN THE EARLY 1970S. SREM IS A FORMAL STEP-BY-STEP PROCESS FOR DEFINING DATA PROCESSING REQUIREMENTS. IT PROVIDES THE MEANS TO THOROUGHLY EVALUATE THE ADEQUACY OF SYSTEM REQUIREMENTS TOWARDS THE GOAL OF ATTAINING GOOD SOFTWARE SPECIFICATIONS FOR ANY SYSTEM PRIOR TO DESIGN AND CODING. ITS GOAL IS TO REDUCE SOFTWARE DEVELOPMENT COST AND SCHEDULE RISK. IN ADDITION TO THE STEP-BY-STEP REQUIREMENTS ENGINEERING TECHNIQUES, SREM INCLUDES A MACHINE-PROCESSABLE ''ENGLISH-LIKE'' REQUIREMENTS STATEMENT LANGUAGE (RSL) AND A REQUIREMENTS ENGINEERING VALIDATION SYSTEM (REVS) TO AUTOMATICALLY PROCESS THE REQUIREMENTS STATEMENTS, AND TO PERFORM A WIDE RANGE OF ANALYSES AND SIMULATIONS ON ITS CENTRALIZED DATA BASE.
REFERENCES: [ALFO77], M. W. ALFORD, "A REQUIREMENTS ENGINEERING METHODOLOGY FOR REAL-TIME PROC. REQ.", IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. SE-3, NO. 1,, 770100
[ALFO78], M. W. ALFORD, "SOFTWARE REQUIREMENTS ENGINEERING METHODOLOGY (SREM)", COMSAC 78 PROCEEDINGS, PP. 332-339, 780000
[ALFO80], M. W. ALFORD, "SOFTWARE REQUIREMENTS ENGINEERING METHODOLOGY (SREM) AT THE", 72ND INFOTECH CONFERENCE ON SOFTWARE DEVELOPMENT TECHNIQUES, 800600
DEVELOPER: TRW
CONTACT: ROBERT H. HOFFMAN, TRW INC., HUNTSVILLE FACILITY, 7702 GOVERNORS DRIVE WEST, HUNTSVILLE, ALABAMA, 35805, USA, 205-837-3950
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SREP, TITLE: SOFTWARE REQUIREMENTS ENGINEERING PROGRAM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: REQUIREMENTS SIMULATION, SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, CONSISTENCY CHECKING, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
COMPUTER (OTHER HARDWARE): TI, CDC 6X00/7X00
TOOL SUMMARY: SREP IS A SET OF TOOLS A TECHNIQUE FOR DEFINING SPECIFYING SOFTWARE REQUIREMENTS. THE TECHNIQUE IS BUILT UPON A LANGUAGE, REQUIREMENTS STATEMENT LANGUAGE (RSL), READABLE BOTH BY A COMPUTER BY MAN, AND A SET OF TOOLS TERMED COLLECTIVELY THE REQUIREMENTS ENGINEERING AND VALIDATION SYSTEM (REVS). THE TOOLS PROVIDE FOR RETENTION OF ALL REQUIREMENTS IN A RELATIONAL DATA BASE FROM WHICH DOCUMENTATION, CONSISTENCY ANALYSES, AND SIMULATIONS MAY BE CONSTRUCTED AUTOMATICALLY. THE METHODOLOGY SYSTEMATICALLY DEVELOPS THE SPECIFICATION FROM SOURCE DOCUMENTATION AT THE

SYSTEM LEVEL, DOCUMENTING OMISSIONS AND ERRORS OF THE SOURCE MATERIALS IN THE PROCESS. THE PRODUCED REQUIREMENTS ARE PROVABLY CONSISTENT, AND MAY BE VALIDATED AGAINST SYSTEM OBJECTIVES THROUGH THE GENERATED SIMULATION. THE ENTIRE PROCESS IS SUBJECT TO SYSTEMATIC MANAGEMENT THROUGH DEFINABLE AND VERIFIABLE MILESTONES SUPPORTED BY REVS.
DOCUMENTATION: SYSTEM DESCRIPTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SRIMP, TITLE: SOFTWARE REQUIREMENTS INTEGRATED MODELING PROGRAM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, MODEL SPECIFICATION, TRANSFORMATION, TRANSLATION, CONVERSION, EDITING, FORMATTING, MACHINE OUTPUT, VHLL OUTPUT, PSL, USER OUTPUT, GRAPHICS, HIERARCHICAL TREE, ACTIVITY DIAGRAM, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, CONSISTENCY CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, PL/1
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): CONTACT GRUMMAN AEROSPACE CORP. FOR DETAILS
TOOL SUPPORTED: YES, TOOL SUPPORT: GRUMMAN AEROSPACE CORP.
TOOL SUMMARY: THE SOFTWARE REQUIREMENTS INTEGRATED MODELING PROGRAM (SRIMP) AIDS IN THE CONCEPTUAL AND REQUIREMENTS DEFINITION PHASES OF THE SOFTWARE DEVELOPMENT PROCESS. THE SRIMP METHODOLOGY WAS DEVELOPED BY SYNTHESIZING THE BETTER FEATURES OF A NUMBER OF WIDELY ACCEPTED REQUIREMENTS TECHNIQUES, AUGMENTED WITH A NUMBER OF GRUMMAN DEVELOPED INNOVATIONS. THE RESULTANT SYSTEM PROVIDES THE USER WITH A FORMAL LANGUAGE TO EXPRESS SPECIFICATIONS THROUGH THE IDENTIFICATION OF OBJECTS AND ACCEPTABLE RELATIONSHIPS. TOP-DOWN DECOMPOSITION IS ENFORCED BY A METHOD WHICH RESULTS IN STRUCTURED INTRA SYSTEM INTERFACES, THUS MINIMIZING MODEL COMPLEXITY. HUMAN FACTORS ENGINEERING, WHICH PLAYED A MAJOR ROLE IN THE DEVELOPMENT OF SRIMP, WAS RESPONSIBLE FOR THE PRODUCTION OF AN EASY-TO-USE TOOL. THE USER IS LED THROUGH A SERIES OF PROMPTS WHERE CONSTANT MONITORING IS PERFORMED TO ASSURE THAT THE USER PROVIDES VALID RESPONSES.
DEVELOPER: GRUMMAN AEROSPACE CORP.
CONTACT: STEPHANIE WHITE, GRUMMAN AEROSPACE CORP., TECHNOLOGY DIVISION, M/S A02/35, BETHPAGE, NY, 11714, USA, 516-575-6493
INFORMATION SOURCE: TOOL FAIR

ACRONYM: SRTRAN.BASELINE, TITLE: BASELINE STANDARD VERSION OF SRTRAN PREPROCESSOR SYSTEM
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, SRTRAN, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, ERROR CHECKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE RESEARCH ASSOCIATES
TOOL SUMMARY: THIS BASIC SOFTWARE PRODUCTION TOOL HAS A FULL SET OF STRUCTURED PROGRAMMING CONSTRUCTS, PLUS A SERIES OF FEATURES DESIGNED TO ENHANCE THE PROGRAMMING PROCESS. STRUCTURED CONTROL STATEMENTS THAT ARE SUPPORTED INCLUDE: (1) CONDITIONAL CONSTRUCTS: IF...ELSE IF...ELSE...END IF, CASE OF...CASE...CASE ELSE...END CASE; (2) ITERATION CONSTRUCTS: DO WHILE...END WHILE, DO...END DO, FOR...END FOR, REPEAT...UNTIL, LOOP...END LOOP; (3) ESCAPE CONSTRUCTS: ESCAPE, ESCAPE DO WHILE, ESCAPE DO, ESCAPE FOR, ESCAPE REPEAT, ESCAPE LOOP. DOCUMENTATION OPTIONS INCLUDE: FULL PRETTY-PRINT LISTING WITH AUTOMATIC INDENTATION, MULTIPLE MODULE PAGINATION AND ACCOUNTING, BUILT IN TIMER AND PRODUCTION MEASUREMENT, STRUCTURE ENHANCEMENTS (BARS AND DOTS), SUBTITLING FEATURES, PAGINATION FEATURES, USER-SWITCHABLE OPTIONS ON MANY PARAMETERS.
DEVELOPER: SOFTWARE RESEARCH ASSOCIATES
CONTACT: EDWARD F. MILLER, SOFTWARE RESEARCH ASSOCIATES, PO BOX 2432, SAN FRANCISCO, CA, 94126, USA, 415-957-1441
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: SSA, TITLE: SNEAK SOFTWARE ANALYSIS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, DIAGNOSTICS, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: PL/1
TOOL SIZE: CORE: 300KB
COMPUTER (OTHER HARDWARE): IBM 360/370 (DISK: 19.8KB,TAPE (1) 9 TRACK)
OS (OTHER SOFTWARE): OS/VS
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUMMARY: A COMPUTERIZED TECHNIQUE FOR IMPROVING THE EFFICIENCY AND RELIABILITY OF COMPUTER PROGRAMS. THE PROCESS INVOLVES THE USAGE OF MATHEMATICAL GRAPH THEORY, ELECTRICAL SNEAK THEORY, AND COMPUTERIZED SEARCH ALGORITHMS ON A COMPUTER PROGRAM TO IDENTIFY SOFTWARE PROBLEMS THAT MAY NOT BE FOUND IN TESTING. THESE TYPES OF PROBLEMS ARE

CALLED SOFTWARE SNEAKS.
DOCUMENTATION: TECHNICAL PAPER
REFERENCES: [GODO76], SYLVIA G. GODOY, "SOFTWARE SNEAK CIRCUIT ANALYSIS", AFWL-TR-75-254, 760400
[GODO76A], S.G. GODOY, "APPL OF SOF SNEAK ANALYSIS TO THE TERMINAL CONFIGURED VEHICLE SYSTEM", D2-118594-1, 760830
[GODO78], S.G. GODOY, "SNEAK ANALYSIS OF THE DIGITAC I MULTIMODE FLIGHT CONTROL SYSTEM", D2-118633-1, 780100
[GODO78A], S.G. GODOY, "SNEAK CIRCUIT AND SOFTWARE SNEAK ANALYSIS", JOURNAL OF AIRCRAFT (VOL. 15, PP. 509-513), 780800
DEVELOPER: BOEING AEROSPACE COMPANY
CONTACT: SYLVIA G. GODOY, BOEING AEROSPACE COMPANY, P. O. BOX 58747, HOUSTON, TX, 77058, USA, 713-488-0910
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: STAG/TEMS, TITLE: SPECIFICATION TRACEABILITY AND ANALYSIS USING GIM
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, REQUIREMENTS SPECIFICATION, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE, TRACKING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: GIM
COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX
TOOL SUMMARY: SPECIFICATION TRACEABILITY AND ANALYSIS USING GIM (STAG) IS USED TO TRACK SPECIFICATIONS. THE TOOL IS A SUPPORTIVE MANAGEMENT FUNCTION THAT GIVES VISIBILITY TO THE REQUIREMENTS LEVEL IN A CLEAR, CONCISE FORMAT. CAPABILITIES INCLUDE TRACKING MULTIPLE SPEC'S AND THEIR CROSS REFERENCE, COUPLED WITH THE ABILITY TO MAKE SPECIAL EXTRACTS BASED ON KEYWORD IDENTIFICATION. THERE IS AN ON-LINE CAPABILITY THAT ALLOWS THE USER TO DO COUNTS, UPDATES, BASIC STATISTICS AND SIMPLE LISTS. BATCH REQUESTS ARE USED FOR MOST UPDATING AND GENERATION REPORTS. STAG/TEMS PROVIDES IMMEDIATE VISIBILITY OF GAPS IN EFFORT AND ALSO OVERLAPPING EFFORTS. REQUIREMENTS CAN BE TRACED THROUGH CHANGE CYCLE AND CURRENT STATUS REPORTED. AN EFFECTIVE ONE TO ONE VISIBILITY OF REQUIREMENTS TO DESIGNS/TESTING IS ATTAINED. CHANGE TRAFFIC CAN BE TRACED EFFECTS ON OTHER ITEMS IN ADDITION TO THE ONE CHANGED CAN BE PRESENTED FOR EVALUATION. THE SYSTEMS TECHNOLOGY PROGRAM USES STAG TO TRACE REQUIREMENTS FROM DESIGN DEVELOPMENT THROUGH TESTING INSTALLATION.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SOFTWARE ANAL EVAL DEPT
CONTACT: JOE DALVEN, TRW SOFTWARE ANAL EVAL DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3676

INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: STAT ENT EVAL, TITLE: STATISTICS ENTRY AND EVALUATION SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, BASIC, USER OUTPUT, TABLES, STATIC ANALYSIS, COMPLEXITY MEASUREMENT, STATISTICAL ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800600
IMPLEMENTATION LANGUAGE: BASIC
TOOL SIZE: 700 STATEMENTS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUPPORTED: YES, TOOL SUPPORT: UNIVERSITY OF WAIKATO
TOOL SUMMARY: THE PROGRAM IS GENERAL SYSTEM FOR COLLECTING DATA FOR A SET OF CHARACTERISTICS FOR INDIVIDUAL PROGRAMS OVER A PERIOD OF TIME. IT ANALYSES THE DATA SET TO PRODUCE LISTS, GRAPHS OR STATISTICS OF DATA SATISFYING DIFFERENT CRITERIA. THE PROGRAM WILL ALLOW FOR THE UPDATING AND CORRECTION OF DATA IN THE DATA SET. ONE FILE DESCRIBES THE CHARACTERISTICS THAT ARE COLLECTED WHILE A SECOND FILE CONTAINS THE DATA FOR THE INDIVIDUAL PROGRAMS OVER A TIME PERIOD.
DOCUMENTATION: TECHNICAL PAPER (20), USER MANUAL (10), OPERATOR MANUAL (10)
REFERENCES: [PAYN80B], A.J. PAYNE, "MICROPROCESSORS AND DISEASE REGISTERS", 20TH CPSEMB CHRISTCHURCH, NZ, 800000
DEVELOPER: A.J. PAYNE
CONTACT: A.J. PAYNE, UNIVERSITY OF WAIKATO, HAMILTON, NEW ZEALAND,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: STRUC1/STRUC2, TITLE: STRUCTRAN I, STRUCTRAN II
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, FORTRAN, DMATRAN, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, RESTRUCTURING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 750000
IMPLEMENTATION LANGUAGE: STRUCTURED FORTRAN
COMPUTER (OTHER HARDWARE): HONEYWELL 6XXX
OS (OTHER SOFTWARE): GCOS
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABILITY ACCORDING TO AIR FORCE MANUAL (AFM) 300-6, PARAGRAPH 11-7A.
TOOL SUPPORTED: YES, TOOL SUPPORT: RADC/ISIS
TOOL SUMMARY: THESE TRANSLATORS ARE TOOLS WHICH FACILITATE STRUCTURED PROGRAMMING USING THE FORTRAN LANGUAGE. STRUCTRAN-1 IS A PRECOMPILER WHICH ACCEPTS A STRUCTURED LANGUAGE, DMATRAN. DMATRAN CONTAINS FILE STRUCTURED STATEMENT FORMS WHICH CAN BE MIXED WITH ORDINARY FORTRAN CONSTRUCTS IN THE INPUT TEXT STREAM. TO ENHANCE READABILITY OF THE PROCESSED SOURCE CODE, STRUCTRAN AUTOMATICALLY INDENTS THE LISTING PRODUCED FOR THE SOURCE CODE ACCORDING TO CONTROL NESTING LEVEL. STRUCTRAN-2 WAS DEVELOPED TO FACILITATE THE TRANSLATION OF EXISTING SOURCE

FORTRAN V PROGRAMS INTO STRUCTURED PROGRAM FORM. STRUCTRAN-2 PROVIDES THE ABILITY TO TRANSLATE UNSTRUCTURED CONTROL FORMS INTO LOGICALLY EQUIVALENT STRUCTURED CONTROL FORMS. DMA REPLACES FORTRAN CONTROL STATEMENTS WITH FIVE STRUCTURED CONSTRUCTS. (1) IF... THEN...ELSE...END IF. (2) DO WHILE...END WHILE. (3) DO UNTIL...END UNTIL. (4) CASE OF...CASE...CASE ELSE...END CASE. (5) BLOCK (NAME)... END BLOCK.
DOCUMENTATION: FINAL TECH REPORT (28), STRUCTRAN I USERS MANUAL (21), STRUCTRAN I DESIGN IMP (14), STRUCTRAN II USERS MANUAL (16), STRUCTRAN II SYSTEM DESIGN IMP MANUAL (56)
DEVELOPER: GENERAL RESEARCH CORPORATION
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: STRUCT, TITLE: STRUCT
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, DIAGNOSTICS, TABLES, STATIC ANALYSIS, AUDITING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: STRUCT AUDITS SOURCE CODE TRANSFER TABLE FOR ADHERENCE TO STRUCTURED PROGRAMMING STANDARDS. ALLOWABLE SEGMENT STRUCTURES INCLUDE: SEQUENCE, IF - THEN - ELSE, DO UNTIL, DO WHILE, CASE AND ESCAPE. OUTPUTS INCLUDE THE PACE SEGMENT TRANSFER TABLE FOR EACH SUBROUTINE, AND MANAGEMENT SUMMARY OF ALL ROUTINES FOR THE WHOLE PROGRAM. INPUT FOR THIS PROGRAM IS NOT SOURCE CODE, BUT A SEGMENT TRANSFER TABLE GENERATED BY PACE. INPUT IS A SEGMENT TRANSFER TABLE PRODUCED BY THE PACE PROGRAM. NO MORE THAN 1000 TRANSFERS PER SUBROUTINE.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: STRUCTURE(S), TITLE: STRUCTURE(S)
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, VHLL INPUT, DESIGN SPECIFICATION, USER OUTPUT, GRAPHICS, DESIGN CHARTS, STATIC ANALYSIS, CROSS REFERENCE, ERROR CHECKING, STRUCTURE CHECKING, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL PORTABLE: PARTIAL
COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX, HONEYWELL 6XXX

OS (OTHER SOFTWARE): OS/VS, EXEC 8, GCOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE REQUIRED
TOOL SUPPORTED: YES, TOOL SUPPORT: KEN ORR AND ASSOCIATES, INC.
TOOL SUMMARY: STRUCTURE(S) IS A SOFTWARE PACKAGE THAT AUTOMATES THE PRODUCTION AND MAINTENANCE OF WARNIER/ORR DIAGRAMS. IT IS USED TO AID THE MANAGER, ANALYST, DESIGNER, PROGRAMMER, AND PROGRAM LIBRARIAN WITH THE CONTROL, ANALYSIS, DESIGN, CONSTRUCTION, MAINTENANCE, AND DOCUMENTATION OF SYSTEMS. VERSION 3.0 OFFERS THE ADDITION OF CONDITIONALS TO THE DIAGRAM, MORE USER-SPECIFIED OPTIONS, IMPROVED ERROR HANDLING, SUPPORT FOR IBM LASER PRINTERS AND FOR ASYNCHRONOUS TERMINALS, AND NEW SUPPORT MATERIAL. STRUCTURE(S) IS AVAILABLE IN IBM OS COBOL. SOURCE CODE IS PROVIDED AND CAN BE MODIFIED WITH VENDOR ASSISTANCE WHEN POSSIBLE TO RUN ON MOST MACHINES HAVING A COBOL COMPILER.
DOCUMENTATION: USER'S GUIDE (125 PAGES), IMPLEMENTATION GUIDE (109 PAGES)
DEVELOPER: KEN ORR AND ASSOCIATES, INC.
CONTACT: ROBERT OTEY, KEN ORR AND ASSOCIATES, INC., 715 E. 8TH, TOPEKA, KS, 66607, USA, 913-233-2349
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: STRUCTURING ENG, TITLE: STRUCTURING ENGINE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, ANSI FORTRAN, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, STATIC ANALYSIS, STRUCTURE CHECKING, TRANSFORMATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PL/1
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL SUMMARY: THE STRUCTURING ENGINE IS A SET OF SOFTWARE TOOLS CAPABLE OF AUTOMATICALLY TRANSFORMING UNSTRUCTURED PROGRAMS INTO EQUIVALENT STRUCTURED PROGRAMS. THIS TRANSFORMATION ENHANCES THE CAPABILITIES OF PROGRAMMING TEAMS BY PROVIDING PROGRAMS THAT ARE EASIER TO UNDERSTAND, SAFER TO MODIFY, AND LESS COSTLY TO MAINTAIN. PROGRAMS OF ARBITRARY COMPLEXITY AND SIZE CAN BE PROCESSED PROVIDED THAT THEY CAN BE COMPILED WITHOUT ERRORS BY THE COMPILER FOR WHICH THEY WERE WRITTEN. THE RESTRUCTURED PROGRAMS ARE WRITTEN IN S-FORTRAN, AN EXTENSION AND IMPROVEMENT OF THE FORTRAN LANGUAGE DEVELOPED BY CFG, INC. TO SUPPORT STRUCTURED CODING IN FORTRAN.
DOCUMENTATION: GENERAL INFORMATION MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: CAINE, FARBER GORDON, INC.
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: STRUCTURIZER, TITLE: STRUCTURIZER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, PROGRAM SPECIFICATION, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: THE STRUCTURIZER ALLOWS A USER TO GENERATE, RATHER SIMPLY, CUSTOM-MADE PREPROCESSORS OF HIS CHOICE. THAT IS, TO AUGMENT LANGUAGES LIKE FORTRAN AND COBOL WITH CONTROL STRUCTURES DEFINED BY THE USER. THIS TOOL IS A KEY TO THE IMPLEMENTATION OF AN EFFECTIVE STRUCTURED LANGUAGE FACILITY. THIS PRODUCT IS A MEMBER OF SOFTOOL 80 MARKETED BY SOFTOOL CORPORATION.
DOCUMENTATION: TECHNICAL REPORTS, USERS MANUAL
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: SUBCRS, TITLE: SUBROUTINE CROSS REFERENCE PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL SUMMARY: THIS PROGRAM PROVIDES A COMPREHENSIVE PICTORIAL DISPLAY OF FORTRAN PROGRAM LINKAGE, INCLUDING A TABLE OF SUBROUTINE CALLED BY REFERENCES.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SURGE 72, TITLE: SURGE 72 COBOL GENERATOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, PROGRAM SPECIFICATION, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 720000

IMPLEMENTATION LANGUAGE: COBOL
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM NTIS, PB-214 256/2
TOOL SUMMARY: THE SOURCE PROGRAM IS A NON-PROPRIETARY COMPUTER PROGRAM IN COBOL WHICH GENERATES APPROPRIATE DATA-PROCESSING LOGIC AND PRODUCES COBOL SOURCE PROGRAMS FROM SIMPLE DESCRIPTIVE PARAMETER CARDS. AS A MACHINE-INDEPENDENT AND APPLICATION-INDEPENDENT SOFTWARE PACKAGE, IT PROVIDES PROGRAMMER AND NON-PROGRAMMER PERSONNEL WITH A SHORTCUT APPROACH TO FILE SORTING, SELECTIVE RETRIEVAL, AND TABULAR REPORT GENERATION, INCLUDING MULTIPLE LEVELS OF TOTALS AND A CAPABILITY FOR CERTAIN OTHER KINDS OF COMPUTATION.
DOCUMENTATION: TECHNICAL PAPER, USER'S GUIDE
REFERENCES: [NTIS80], NATIONAL TECHNICAL INFORMATION SERVICE, "A DIRECTORY OF COMPUTER SOFTWARE AND RELATED TECHNICAL REPORTS", PB80-110232, 800000
INFORMATION SOURCE: NTIS

ACRONYM: SURVAYOR, TITLE: SET AND USE OF ROUTINE VARIABLES ANALYSIS PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL SUMMARY: THE SURVAYOR PROGRAM IS AN AUTOMATED SOFTWARE VERIFICATION TOOL WHICH WILL PERFORM THE NECESSARY STRUCTURAL PATH ANALYSIS TO IDENTIFY: ALL POSSIBLE PATHS IN A ROUTINE, AND WHERE IN A ROUTINE VARIABLES ARE COMPUTED AND USED. BASED ON PATH AND USAGE DATA COLLECTED, THE SURVAYOR PROGRAM WILL: EVALUATE EACH LOCAL VARIABLE TO IDENTIFY WHICH ARE COMPUTED AND NOT USED, WHICH ARE PRESET AND NOT USED, WHICH ARE USED IN COMPUTATIONS WITHOUT BEING GIVEN A VALUE, THE PATH FOR WHICH A VARIABLE MAY BE USED WITHOUT BEING GIVEN A VALUE; EVALUATE EACH GLOBAL VARIABLE TO IDENTIFY EQUIVALENCES NOT REQUIRED, COMMON BLOCKS NOT REQUIRED, AND SUBROUTINE PARAMETER VARIABLES NOT REQUIRED; AND PROVIDE DETAILED INFORMATION ON THE QUANTITY AND TYPE OF SOFTWARE PROCESSED.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SOFTWARE TECHNOLOGY DEPARTMENT
CONTACT: R. L. MAITLEN, TRW, SOFTWARE TECHNOLOGY DEPARTMENT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SUS, TITLE: SEMANTIC UPDATE SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, MANAGEMENT, CONFIGURATION MANAGEMENT, CHANGE CONTROL,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SUPPORTED: YES
TOOL SUMMARY: SEMANTIC UPDATE IS DESCRIBED AS "A TOOL THAT ASSISTS IN THE INCREMENTAL MODIFICATION OF SOFTWARE SYSTEMS TREATED AS SYSTEMS". IT CAN BE APPLIED TO A PROGRAM PART, AN ENTIRE MODULE, A SOFTWARE SUBSYSTEM, OR AN ENTIRE SOFTWARE SYSTEM. THE SYSTEM IS LANGUAGE DEPENDENT AND IS NOT CAPABLE OF HANDLING DATA FILES. HOWEVER, IT CAN DETERMINE THE EXTENT OF SIDE EFFECTS TO PROPOSED OR DIRECTED CHANGES AND PROVIDE TRIAL UPDATES TO DETERMINE THE EXTENT OF SIDE EFFECTS.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[HIRS79], M. A. HIRSCHBERG, "A SEMANTIC UPDATE SYSTEM FOR SOFTWARE MAINTENANCE", PROCEEDINGS COMPCON, SAN FRANCISCO, CA, PP 307-309, 0
DEVELOPER: SOFTWARE RESEARCH ASSOCIATES, SAN FRANCISCO, CA.
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: SYDIM, TITLE: SYSTEMS DEVELOPMENT INTERFACE MANAGER
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, INTERFACE ANALYSIS, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: DESIGN
IMPLEMENTATION LANGUAGE: COBOL
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/MVS
TOOL AVAILABLE: NO, PUBLIC DOMAIN: NO
TOOL SUMMARY: SYDIM PROVIDES INTERFACE MANAGEMENT SUPPORT FOR SOFTWARE DEVELOPMENT AND MAINTENANCE. INPUT, OUTPUT, AND LOCAL DATA FROM PROGRAM UNITS ARE LISTED DURING THE DESIGN PHASE IN A LANGUAGE INDEPENDENT FORMAT. SYDIM PROVIDES EASY ADDITION, DELETION OR MODIFICATION CAPABILITIES. THE DATA BASE PROVIDES EXCELLENT PROGRAM DOCUMENTATION. SYDIM PROCESSED THE INTERFACE DATA TO GENERATE THE COMMON DATA AREA DECLARATIONS FOR THE DESIRED LANGUAGE.
DOCUMENTATION: TECHNICAL PAPER, DEVELOPMENT SPECIFICATION
DEVELOPER: GENERAL DYNAMICS
CONTACT: L. C. KLOS, GENERAL DYNAMICS, P.O. BOX 748, FORT WORTH, TX, 76101, USA, 817-732-4811
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: SYDOC, TITLE: A STRUCTURED DOCUMENTATION PACKAGE FOR COBOL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, DIAGNOSTICS, GRAPHICS, HIERARCHICAL TREE, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, STATISTICAL ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: ASSEMBLY MACRO
TOOL SIZE: 90,000 LINES OF CODE
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): SVS, OS/VS, OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE REQUIRED
TOOL SUMMARY: SYNCSORT IS A STRUCTURED DOCUMENTATION PACKAGE THAT ACCEPTS COBOL SOURCE CODE AS INPUT AND, AFTER ANALYZING IT, PRODUCES A SERIES OF REPORTS THAT REVEAL THE PROGRAM'S STRUCTURE, COMPONENTS, AND RELATIONSHIPS. THE PACKAGE'S ANALYSIS OF A COBOL PROGRAM IS PRESENTED IN SEVEN BASIC REPORTS: PROCESS CHART, HIERARCHY CHART, SECTION PROCESS TABLE, DATA CHART, SOURCE LISTING CROSS CHART, DIAGNOSTIC LISTINGS.
REFERENCES: [COMP81], ----------, "AID GIVES OS COBOL USERS STRUCTURED DOCUMENTATION", COMPUTERWORLD, 811026
DEVELOPER: SYNCSORT, INC., 560 SYLVAN AVE., ENGLEWOOD CLIFFS, NJ, 07632
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: SYMCRS, TITLE: SYMBOL CROSS REFERENCE PROGRAM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, GLOBAL VARIABLE MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: SYMCRS OUTPUTS GLOBAL SYMBOLS AND IDENTIFIES THE ROUTINES WHERE THE SYMBOLS WERE REFERENCED. IT ALSO IDENTIFIES WHICH SYMBOLS SHOULD NOT BE IN COMMON, AND THEREFORE MAKES THE DATA BASE MORE EFFICIENT. SYMCRS OUTPUT IS VERY USEFUL IN THE MAINTENANCE AND DEVELOPMENT OF LARGE COMPUTER PROGRAMS. THE ALPHABETICALLY SORTED LISTING PROVIDES A CONVENIENT AND EFFICIENT WAY OF OBTAINING A SYMBOL CROSS REFERENCE, AND IS SUITABLE FOR DIRECT INCLUSION IN CONTRACTUALLY REQUIRED DOCUMENTATION.
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW SOFTWARE TECHNOLOGY DEPT
CONTACT: V. Z. SOTIRIOU, TRW SOFTWARE TECHNOLOGY DEPT, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480

INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: SYSTEM MONITOR, TITLE: SYSTEM MONITOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, ERROR CHECKING, DYNAMIC ANALYSIS, TUNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL AVAILABLE: YES
TOOL SUMMARY: SYSTEM MONITOR IS A SOFTWARE SYSTEM WHICH HAS BEEN DEVELOPED TO PROVIDE ERROR DETECTION, ERROR CONTAINMENT, AND FUNCTIONAL RECOVERY SUPPORT TO APPLICATIONS SOFTWARE AT THE PROGRAM, MODULE, AND SYSTEM LEVELS. IT IS COMPRISED OF FIVE COMPONENTS: INTERNAL PROCESS . SUPERVISOR, EXTERNAL PROCESS SUPERVISOR, INTERACTION SUPERVISOR, SYSTEM MONITOR KERNEL, AND MAINTENANCE PROGRAM.
REFERENCES: [DONA80], JOHN D. DONAHOO AND DOROTHY SWEARINGER, "A REVIEW OF SOFTWARE MAINTENANCE TECHNOLOGY", RADC-TR-80-13, INTERIM REPORT, 800200
[YAU76], S. S. YAU, "AN APPROACH TO ERROR-RESISTANT SOFTWARE DESIGN", PROCEEDINGS SECOND INTERNATIONAL CONFERENCE ON SOFTWARE ENG., 761000
INFORMATION SOURCE: RADC-TR-80-13, INTERIM REPORT

ACRONYM: SYSTEM-80, TITLE: AN AUTOMATED COBOL GENERATION SYSTEM
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, PROGRAM SPECIFICATION, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, COBOL 74,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE REQUIRED
TOOL SUPPORTED: YES, TOOL SUPPORT: PHOENIX SYSTEMS, INC.
TOOL SUMMARY: SYSTEM-80 UTILIZES A DATA DICTIONARY (SYSTEM-80'S ENCYCLOPEDIA) COUPLED WITH PROGRAM GENERATORS TO PRODUCE PROGRAMS WHICH CONFORM TO THE NEEDS OF THE USER. THESE PROGRAMS ARE ANSI STANDARD COBOL SOURCE CODE WHICH THE USER MAY MODIFY, ALTHOUGH IT IS NOT NORMALLY NECESSARY TO DO SO. DURING THE FIRST PHASE OF THE PROCESS, THE USER DEVELOPS THE SCHEME FOR THE VARIOUS FILES. ADDITIONALLY, REQUIRED INPUT VALIDATION CRITERIA AND/OR OUTPUT EDITS SHOULD BE DETERMINED. THE USER THEN INTERACTS WITH SYSTEM-80 DURING THE DEFINITION PHASE OF THE OPERATION. AT THIS TIME SYSTEM-80 ACQUIRES THE MANY VARIABLE PARAMETERS SUCH AS FILE-ID, PRINT EDITS, DATA TYPE, ETC. SCREEN FORMATS, IF NEEDED, ARE ALSO SPECIFIED DURING THIS PHASE. DURING THE GENERATION PHASE, THE USER SPECIFIES THE TYPE OF PROGRAM REQUIRED. INTERACTING WITH THE USER, SYSTEM-80 THEN PRODUCES THE SPECIFIED PROGRAM, A LINE AT A TIME. THIS FEATURE MINIMIZES THE RISK OF NEEDLESS CODE BEING INSERTED INTO THE PROGRAM.

DEVELOPER: PHOENIX SYSTEMS, INC.
CONTACT: PHOENIX SYSTEMS, INC., 1106 OHIO RIVER BLVD., SEWICKLEY, PA, 15143, USA, 412-741-8330
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: SYSXREF, TITLE: CDC/CYBER SYSTEM CROSS-REFERENCE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, CROSS REFERENCE,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL 6000
TOOL SIZE: 1800 STATEMENTS
COMPUTER (OTHER HARDWARE): CDC CYBER, CDC 6X00/7X00
OS (OTHER SOFTWARE): NOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): PROPRIETARY PROPERTY OF BATTELLE LABS, PRICE INQUIRIES WELCOME
TOOL SUMMARY: THE CDC/CYBER SYSTEM CROSS-REFERENCE PROGRAM PROVIDES A SORTED LISTING CONTAINING ALL ENTRY-POINT NAMES AND EACH ENTRY-POINT NAME ENTRY CONTAINS SUCH INFORMATION AS THE NAMES OF ALL THE MODULES THAT CALL THIS ENTRY AND A LIST OF ALL THE MODULES THAT ARE CALLED BY THIS ENTRY. OTHER INFORMATION INDICATES WHETHER THE ENTRY-POINT NAME IS A MAIN OR SECONDARY ENTRY POINT FOR A SUBROUTINE.
DOCUMENTATION: USER INSTRUCTIONS
DEVELOPER: BATTELLE COLUMBUS LABS
CONTACT: CARY SCOFIELD, BATTELLE COLUMBUS LABS, 505 KING AVE, COLUMBUS, OH, 43201, USA, 614-424-5049
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: TAB40, TITLE: TAB40 DECISION TABLE PREPROCESSOR
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, VHLL INPUT, PROGRAM SPECIFICATION, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, COBOL, ALGOL, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES, TOOL SIZE: 58K BYTES OF MEMORY
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FROM NTIS, PB-277 413/1
TOOL SUMMARY: THE TAB40 DECISION TABLE PREPROCESSOR SYSTEM CONVERTS LIMITED, EXTENDED AND MIXED ENTRY DECISION TABLES WRITTEN IN EITHER A VERTICAL OR A HORIZONTAL FORMAT INTO FORTRAN, COBOL OR ALGOL. IT CAN HANDLE TABLES OF UP TO 99 RULES AND 99 CLAUSES (I.E., CONDITIONS AND ACTIONS). FREE FORM STATEMENTS CAN BE INTERMIXED WITH THE DECISION TABLES. INCLUDES A MACRO-DEFINITION FACILITY WHICH ALLOWS ONE TO EMPLOY AN ENRICHED LANGUAGE IN THE DECISION TABLES.
DOCUMENTATION: TECHNICAL REPORT
REFERENCES: [NTIS80], NATIONAL TECHNICAL INFORMATION SERVICE, "A DIRECTORY OF COMPUTER SOFTWARE AND RELATED TECHNICAL REPORTS", PB80-110232, 800000

INFORMATION SOURCE: NTIS

ACRONYM: TAFIRM, TITLE: TAFIRM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, JOVIAL J4, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, MANAGEMENT, TEST DATA MANAGEMENT, DYNAMIC ANALYSIS, TRACING, PATH FLOW TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL
COMPUTER (OTHER HARDWARE): CDC 3XXX
TOOL SUMMARY: TAFIRM IS AN AUTOMATED SOFTWARE DEVELOPMENT TOOL WHICH WAS DESIGNED TO SHORTEN THE SCHEDULE FOR SOFTWARE DEVELOPMENT AND ALSO TO REDUCE COSTS THROUGH EARLY IDENTIFICATION OF LOGIC AND COMPUTATIONAL ERRORS. TAFIRM AUTOMATICALLY PERFORMS AND EVALUATES A SET OF TESTS ON OTHER COMPUTER PROGRAMS DURING THE DEVELOPMENT PHASE. IT PERFORMS A LOGIC PATH ANALYSIS, EXECUTES ALL THE SOURCE STATEMENTS, AND CHECKS THE ACCURACY OF EVERY COMPUTATION. IT OPERATES EFFECTIVELY WITH DETAILED INPUT TEST DATA OR WITH NO TEST DATA SPECIFIED. TAFIRM CONSISTS OF THREE MODULES AND A DRIVER PROGRAM. THE TASKS WHICH ARE PERFORMED ARE: STRIP TESTDATA FROM THE SOURCE CODE TAPE; LOAD THE SPECIFIED CODING UNITS FROM THE MASTER TAPE AND EXECUTE THEM WITH THE CONTROLLED DATA FROM THE SOURCE CODE TAPE; PRINT REPORTS ON THE TEST RESULTS; AND OUTPUT A TABULATION OF ALL POSSIBLE LOGICAL PATHS INTO AND OUT OF THE TEST UNITS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASD379], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TAPS/AM, TITLE: TERMINAL APPLICATION PROCESSING SYSTEM/APPLICATIONS MANAGER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, TRANSFORMATION, EDITING, FORMATTING, MACHINE OUTPUT, USER OUTPUT, USER-ORIENTED TEXT, DOCUMENTATION, STATIC ANALYSIS, CROSS REFERENCE, MANAGEMENT, FILES MANAGEMENT, DATA BASE MANAGEMENT, DYNAMIC ANALYSIS, SIMULATION, CONTROL, INTERACTIVE,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL PORTABLE: YES
OS (OTHER SOFTWARE): OS, OS/VS, DOS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE, FOR SALE
TOOL SUMMARY: TAPS/AM (TERMINAL APPLICATION PROCESSING SYSTEM/APPLICATIONS MANAGER) IS A SUPPORT PRODUCT DESIGNED TO INCREASE PRODUCTIVITY IN DEVELOPING AND MAINTAINING

ON-LINE SYSTEMS. THE SYSTEM PROVIDES ROUTINES TO PERFORM STANDARD FUNCTIONS COMMONLY PROGRAMMED INTO MOST ON-LINE APPLICATIONS. IT DRIVES THESE ROUTINES AND THE USER APPLICATION CODE THROUGH A GENERALIZED TABLE STRUCTURE CREATED FROM INFORMATION DERIVED FROM INPUT DATA SHEETS. TAPS FEATURES: MACRO LANGUAGE, DATA ELEMENT DICTIONARY, ON-LINE TESTING SIMULATOR FOR BATCH MODE, SCREEN AND FILE RECOVERY, AND AN ABILITY TO PROGRAM IN HIGHER-LEVEL LANGUAGES. STANDARDIZED FACILITIES INCLUDE: SIGN-ON/SIGN-OFF, APPLICATION SELECTION, TRANSACTION MENU SELECTION AND TERMINAL OPERATOR INTERRUPT. AUTOMATIC CAPABILITIES INCLUDE: DATA INQUIRY, COLLECTION, AND PAGING; SCREEN PROCESSING; DATA FORMAT EDITING; AND DOCUMENTATION. THE TAPS/CM/IBM OPTION PROVIDES A COMBINATION COMMUNICATIONS MONITOR AND APPLICATIONS MANAGER FOR IBM SYSTEMS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: DECISION STRATEGY CORP.
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: TATTLE, TITLE: TATTLE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, JOVIAL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, JOVIAL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL
COMPUTER (OTHER HARDWARE): CDC 3XXX
TOOL SUMMARY: TATTLE MONITORS SOURCE STATEMENT EXECUTIONS DURING FREE-RUNNING END-TO- END TESTS. IT MAINTAINS EITHER (DEPENDING ON USER OPTION) A YES/NO INDICATOR WHICH IS SET WHEN A STATEMENT IS FIRST EXECUTED, OR ELSE AN ACTUAL CUMULATIVE EXECUTION FREQUENCY COUNT, FOR EVERY SOURCE STATEMENT IN EVERY PROGRAM SUBJECT TO TATTLE MONITORING. UPON REQUEST, IT WILL DISPLAY CUMULATIVE EXECUTION FREQUENCIES (OR YES/NO INDICATORS) AT THE STATEMENT LEVEL, I.E., NEXT TO EACH STATEMENT, IN A RE-LISTING OF THE SOURCE CODE.
DOCUMENTATION: DETAILED DESIGN DOCUMENTATION
REFERENCES: [ASD379], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TCAT, TITLE: TEST COVERAGE ANALYSIS TOOL
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, TABLES, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,

STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 800700
COMPUTER (OTHER HARDWARE): IBM 360/370, UNIVAC 11XX
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE FEE INCLUDES ONE YEAR OF MAINTENANCE
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE RESEARCH ASSOCIATES
TOOL SUMMARY: THE TEST COVERAGE ANALYSIS TOOL (TCAT) AUTOMATICALLY PROCESSES A COBOL PROGRAM AND PRODUCES A LOGICALLY EQUIVALENT VERSION THAT INCLUDES SPECIAL RUNTIME SUBROUTINE CALLS. THE TCAT SYSTEM OPERATES ON STANDARD COBOL FOR THE IBM AND UNIVAC ENVIRONMENTS AND IS ACCOMPANIED BY DETAILED DOCUMENTATION AS WELL AS SUBSCRIPTION-TYPE MAINTENANCE AND UPGRADE SUPPORT.
REFERENCES: [COMP80], "SYSTEM ANALYZES COBOL COVERAGE", COMPUTERWORLD, 800714
DEVELOPER: SOFTWARE RESEARCH ASSOCIATES
CONTACT: SOFTWARE RESEARCH ASSOCIATES, PO BOX 2432, SAN FRANCISCO, CA, 94126, USA, 415-957-1441
INFORMATION SOURCE: COMPUTERWORLD, SRA

ACRONYM: TDBCOMP, TITLE: TDBCOMP PROGRAM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, LISTINGS, STATIC ANALYSIS, COMPARISON,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: JOVIAL J4
COMPUTER (OTHER HARDWARE): CDC 3XXX
TOOL SUMMARY: TDBCOMP COMPARES AND SUMMARIZES THE DIFFERENCES BETWEEN TWO DATA BASES, WHERE ONE DATA BASE IS ON TAPE AND THE OTHER IS ACTIVE ON DISK. THE IMPORTANCE OF AUTOMATIC DATA COMPARISON IN EVALUATION OF THE EFFECT OF CHANGES (BOTH CODING CHANGES AND PARAMETRIC CHANGES) IS THAT IT SAVES MANY ENGINEERING MAN-HOURS OTHERWISE WASTED ON MANUAL DATA COMPARISONS. IT PROVIDES MORE ACCURATE COMPARISON THAN POSSIBLE MANUALLY, AND ENABLES THE ENGINEER TO FOCUS HIS TIME AND ATTENTION ON ANALYSIS OF THE DIFFERENCES REPORTED. THIS CAPABILITY IS NEEDED ON PRACTICALLY A DAILY BASIS DURING A SOFTWARE TEST PROCESS.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, OPERATIONAL SOFTWARE OPERATIONS M
CONTACT: DAVID E. HEINE, TRW, OPERATIONAL SOFTWARE OPERATIONS M, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-535-3480
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TDEM, TITLE: TEST DATA EFFECTIVENESS MEASUREMENT SUBSYSTEM

CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, FORTRAN V, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN V
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: THE ITDEM SUBSYSTEM PROVIDES A MEASUREMENT OF THE EFFECTIVENESS OF TEST CASES IN EXERCISING FORTRAN SOFTWARE AND DISPLAYS INFORMATION TO AID IN IMPROVING THE EFFECTIVENESS OF TESTING. THE SUBJECT SOFTWARE IS AUTOMATICALLY INSTRUMENTED WITH TRAPS BY ITDEM, AND THE INSTRUMENTED PROGRAM IS THEN RECOMPLILED. AT EXECUTION TIME, THESE TRAPS GENERATE A RECORDING STREAM OF THE EXECUTION. THE RECORDING STREAM IS USED TO DISPLAY A SUMMARY MAP OF THE FREQUENCY OF EXECUTION OF THE SUBJECT SOFTWARE SUBROUTINES, ENTRY POINTS, STATEMENTS, OR TRANSFERS (SEGMENT RELATIONSHIPS) ACCORDING TO THE OPTION SELECTED. OPTIONALLY, A DISPLAY OF THE UNEXECUTED CODE, THE BRANCH CONDITIONS REQUIRED TO EFFECT EXECUTION, AND THE STATEMENTS IN WHICH THE RELATED BRANCH VARIABLES ARE COMPUTED MAY BE SELECTED TO PROVIDE INFORMATION TO AID IN IMPROVING THE TEST CASES.
DOCUMENTATION: USER'S GUIDE, PROGRAMMER'S GUIDE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, TRW, HOUSTON TX.
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TEST PREDICTOR, TITLE: TEST PREDICTOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, CONSTRAINT EVALUATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: TEST PREDICTOR IS A QUALITY ASSURANCE TOOL USED TO AUTOMATICALLY GENERATE TEST CASE INPUTS FOR FORTRAN COMPUTER PROGRAMS TO GUARANTEE THAT ALL BRANCHES WILL HAVE BEEN TESTED. IF A PARTICULAR BRANCH IS IMPOSSIBLE TO TEST, THE TEST PREDICTOR WILL SO INFORM THE USER. TEST PREDICTOR WILL AUTOMATICALLY GENERATE TEST INPUTS FOR A PARTICULAR PATH SELECTED BY THE USER, AND IT WILL IDENTIFY ALL NON-REPETITIVE PATHS THROUGH A BLOCK OF SOFTWARE. USING THIS TOOL, QUALITY ASSURANCE CAN INDEPENDENTLY TEST SELECTED ROUTINE, AND CAN ANALYZE SEQUENCES OF EVENTS LEADING TO HAZARDOUS OR ERRONEOUS CONDITIONS. INPUTS FOR TEST PREDICTOR ARE THE USER'S FORTRAN SOURCE CODE AND OPTIONALLY, ANY PRESPECIFIED VARIABLE DATA RANGES. OUTPUTS

INCLUDE A LISTING OF THE USER'S SOURCE CODE ANNOTATED WITH SEGMENT NUMBERS, A LIST OF ALL NON-REPETITIVE PATHS THROUGH EACH ROUTINE, AND A LIST OF THE MINIMUM NUMBER OF TEST CASES NECESSARY TO EXECUTE ALL SEGMENTS AND THE ASSOCIATED DATA RANGE FOR EACH INPUT VARIABLE.
DOCUMENTATION: NONE
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TEVERE-1, TITLE: A SOFTWARE SYSTEM FOR PROGRAMS TESTING AND VERIFICATION
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, IFTRAN, USER OUTPUT, LISTINGS, DYNAMIC ANALYSIS, SYMBOLIC EXECUTION,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 810000
IMPLEMENTATION LANGUAGE: LISP 1.5
COMPUTER (OTHER HARDWARE): DEC PDP-11 (64K CORE MEMORY), BURROUGHS B6700
TOOL AVAILABLE: YES
TOOL SUMMARY: TEVERE-1 IS A SOFTWARE SYSTEM INTENDED TO BE USED FOR VALIDATION OF WELL-STRUCTURED PROGRAMS WRITTEN IN AN ALGOL-LIKE LANGUAGE WHICH ALLOWS THE USE OF ONLY THE THREE BASIC CONSTRUCTS OF STRUCTURED PROGRAMMING (ASSIGNMENT, WHILE-DO, IF-THEN-ELSE) PLUS INPUT-OUTPUT STATEMENTS. BOTH THE PROGRAM USED TO DERIVE TEST CASES AND THE PROGRAM USED TO AID PROGRAM PROOF ARE BASED ON THE "WEAKEST PRECONDITION" THEORY APPLIED TO WELL-STRUCTURED PROGRAMS IN ORDER TO DERIVE "PATH-PREDICATES", LOGICAL REQUIREMENTS WHICH MUST BE FULFILLED BY TEST DATA IF THE PROGRAM EXECUTION IS TO FOLLOW A PARTICULAR PATH. THE SYSTEM IS INTENDED FOR USE AS PART OF THE TESTING AND VERIFICATION OF THE SOFTWARE FOR A REACTOR SAFETY SYSTEM.
DOCUMENTATION: SYSTEM DESCRIPTION (8)
REFERENCES: [BOLO79], S. BOLOGNA, "TEVERE-1: A SOFTWARE SYSTEM FOR PROGRAMS TESTING AND VERIFICATION", CONGRESSO AICA '79, 791000
DEVELOPER: CNEN CSN-CASACCIA (ITALY), RISO NATIONAL LABORATORY (DENMARK)
CONTACT: SANDRO BOLOGNA, CNEN CSN-CASACCIA, C. P. 2400, ROMA, A. D., ITALY, 1-300-6948
J. R. TAYLOR, RISO NATIONAL LABORATORY, RISO, DENMARK,
INFORMATION SOURCE: CONGRESSO AICA '79

ACRONYM: TFA, TITLE: TRACE FREQUENCY ANALYZER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING

FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: CORE: 60000
COMPUTER (OTHER HARDWARE): CDC CYBER
OS (OTHER SOFTWARE): SCOPE 3.4
TOOL AVAILABLE: YES
TOOL SUMMARY: THIS PROGRAM USES THE COBOL TRACE FILE TO ANALYZE EACH PARAGRAPH SHOWING THE NUMBER OF TIMES IT WAS ENTERED AND THE EXECUTION TIME OF THE PARAGRAPH. THE TRACE FILE IS PRODUCED WHEN THE TRACE OPTION IS USED AT COMPILE TIME OF THE PROGRAM TO BE ANALYZED. KNOWING THOSE PARAGRAPHS WHICH ARE HIGH IN FREQUENCY AND TIME ACCUMULATION WILL ENABLE THE PROGRAMMER TO DIRECT OPTIMIZING EFFORTS TO THOSE PARAGRAPHS THAT MIGHT NEED IT THE MOST.
DOCUMENTATION: TECHNICAL PAPER
DEVELOPER: USAF/ALC
CONTACT: BILL SHIRLEY, USAF/ALC, SM-ALC/ACDAB, BLDG 269B, MCCLELLAN AFB, CA, 95652, USA, 916-643-3642
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: THE ENGINE, TITLE: COBOL STRUCTURING ENGINE
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, TRANSFORMATION, EDITING, RESTRUCTURING, CODE RESTRUCTURING, INSTRUMENTATION, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, COBOL, USER OUTPUT, LISTINGS, STATIC ANALYSIS, ERROR CHECKING, STRUCTURE CHECKING, SCANNING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL PORTABLE: YES, TOOL SIZE: 400K
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): SERVICE CONTRACT
TOOL SUPPORTED: YES, TOOL SUPPORT: CATALYST CORPORATION
TOOL SUMMARY: STRUCTURED RETROFIT IS A SOFTWARE TOOLS BASED METHODOLOGY. IT INTRODUCES TODAY'S STRUCTURED PROGRAMMING METHODOLOGIES INTO EXISTING SYSTEMS IN ORDER TO MEET FUTURE DEMANDS FOR CHANGE. ITS FOCUS IS ON APPLICATION SYSTEMS MAINTENANCE. TODAY MAINTENANCE CONSUMES 70% OF THE TYPICAL MIS BUDGET. THE STRUCTURED PROGRAMMING METHODOLOGIES CUT MAINTENANCE COSTS BY A RATIO OF 3 TO 1. STRUCTURED RETROFIT ALLOWS AN ORGANIZATION TO INTRODUCE THE STRUCTURED METHODOLOGIES INTO SYSTEMS DEVELOPED WITHOUT THEM IN A STRAIGHTFORWARD, FAST, AND RELIABLE MANNER. RETROFIT TAKES WORKING COBOL PROGRAMS-- WRITTEN AND MAINTAINED BY A VARIETY OF PROGRAMMERS IN A VARIETY OF STYLES--AND RESTRUCTURES AND REFORMATS THEM MECHANICALLY. IT GIVES THE CODE A CONSISTENT STRUCTURE AND FORMAT, MAKING IT MORE READABLE, UNDERSTANDABLE, AND MAINTAINABLE. IT IS THE

APPLICATION OF THE STRUCTURED PROGRAMMING CONSTRUCTS TO EXISTING "SPAGHETTI" CODE.
REFERENCES: [LYON80], M.J. LYONS, "STRUCTURED RETROFIT - 1980", PROCEEDINGS OF SHARE 55, ATLANTA, GA, 800800
[MILL80], J. C. MILLER, "STRUCTURED RETROFIT", TECHNIQUES OF PROGRAM AND SYSTEMS MAINTENANCE, ETHNOTECH, 800000
[LYON81], J. J. LYONS, "SALVAGING YOUR SOFTWARE ASSET", PROCEEDINGS OF THE NATIONAL COMPUTER CONFERENCE, 810500
DEVELOPER: CATALYST CORP.
CONTACT: MICHAEL J. LYONS, CATALYST CORPORATION, 433 SOUTH KENSINGTON, LA GRANGE, IL, 60525, USA, 312-352-5422
INFORMATION SOURCE: TOOL FAIR

ACRONYM: TIDY, TITLE: TIDY
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, FORMATTING, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THIS PROGRAM PROVIDES A SIMPLE WAY TO CLEAN UP FORTRAN PROGRAMS BY MAKING ALL STATEMENT NUMBERS SEQUENTIAL, LABELING AND SEQUENCING THE CARDS.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: BRUNSWICK DEFENSE DIV.
CONTACT: JAMES N. CHURCHYARD, BRUNSWICK DEFENSE DIV., 3333 HARBOR BLVD., COSTA MESA, CA, 92626, USA, 714-546-8030
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: TIMECS, TITLE: TASK INTERNAL MICRO EXECUTION CHRONOGRAPH SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, STATISTICAL ANALYSIS, DYNAMIC ANALYSIS, TUNING, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL, COMPASS
TOOL SIZE: CORE: 5K
COMPUTER (OTHER HARDWARE): CDC 3XXX
OS (OTHER SOFTWARE): MASTER
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: TIMECS (TASK INTERVAL MICRO EXECUTION CHRONOGRAPH SYSTEM IS A JOB PERFORMANCE EVALUATION SYSTEM. TIMECS IDENTIFIES INEFFICIENT TASKS WITHIN A JOB AND THE INEFFICIENT ROUTINES WITHIN THAT TASK. A STATISTICS EXTRACTION SYSTEM AND ANALYSIS/REPORT SYSTEM ARE THE 2 BASIC ELEMENTS OF TIMECS. THE STATISTICS EXTRACTION SYSTEM IS A SOFTWARE MONITOR THAT COLLECTS WAIT STATUS, EXECUTIVE REQUEST, TASK OVERLAY INITIATION, AND P-ADDRESS STATISTICS FOR ALL TASKS DURING THE JOB SAMPLE PERIOD. THE ANALYSIS/REPORT SYSTEM GENERATES 4 REPORT FORMATS FROM A

TAPE GENERATED BY THE STATISTICS SYSTEM. 2 JOB SUMMARY REPORTS AND 2 TASK REPORTS FOR EACH TASK AND OVERLAY ARE GENERATED.
DOCUMENTATION: USER'S MANUAL
DEVELOPER: TECHNALYSIS CORPORATION
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: TIMER, TITLE: PROGRAM EXECUTION TIMER
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, GRAPHICS, TABLES, DYNAMIC ANALYSIS, TIMING,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 770000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SIZE: 2000 STATEMENTS
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS/MVS
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE THROUGH FEDERAL SOFTWARE EXCHANGE CENTER, FSWEC-77/0373
TOOL SUMMARY: TIMER IS A SYSTEM FOR ANALYZING AN EXECUTING PROGRAM'S UTILIZATION OF CPU TIME. TIMER TAKES A PROGRAM, WITH ITS DATA AND PRODUCES A CPU TIME ACCOUNTING BY STORAGE LOCATION FOR ITS EXECUTION ON THAT PARTICULAR DATA. PRINTED AND PLOTTED REPORTS ARE PRODUCED THAT SHOW THE AMOUNT OF CPU TIME SPENT IN EACH AREA OF THE PROGRAM'S STORAGE. THE NUMBER AND SIZE OF THE AREAS TO BE MONITORED ARE DETERMINED BY USER INPUT.
REFERENCES: [FSEC80], GENERAL SERVICES ADMINISTRATION/NATIONAL TECHNICAL INFORMATION SERVICE, "FEDERAL SOFTWARE EXCHANGE CATALOG", GSA/ADTS/C-80/1, PB80-904001, 800100
CONTACT: GSA FEDERAL SOFTWARE EXCHANGE, 2 SKYLINE PL(11TH FL), 5203 LEESBURG PK, FALLS CHURCH, VA, 22041, 703-756-2610
INFORMATION SOURCE: FEDERAL SOFT EXCHANGE CATALOG

ACRONYM: TOOLPACK, TITLE: AN INTEGRATED COLLECTION OF TOOLS FOR MATHEMATICAL SOFTWARE
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, DATA INPUT, CODE INPUT, FORTRAN, TRANSFORMATION, EDITING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, DATA OUTPUT, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, CROSS REFERENCE, MANAGEMENT, FILES MANAGEMENT, STRUCTURE CHECKING, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: DESIGN, DATE (YYMMDD): 830000
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: NO, PUBLIC DOMAIN: YES
TOOL SUMMARY: TOOLPACK IS AN APPROACH BEING TAKEN TO CONFIGURE A SET OF TOOL CAPABILITIES WHOSE GOAL IS THE SUPPORT OF MATHEMATICAL SOFTWARE DEVELOPMENT MAINTENANCE

AND TRANSPORTATION. THE TOOLPACK TOOL SET IS BEING DESIGNED TO SUPPORT SUCH ACTIVITIES AS EDITING, TESTING, ANALYSIS, FORMATTING, TRANSFORMATION, DOCUMENTATION, AND PORTING OF CODE. TOOLS FOR REALIZING MOST OF THESE FUNCTIONAL CAPABILITIES ALREADY EXIST, YET TOOLPACK AIMS TO DO FAR MORE THAN SIMPLY BRING THEM TOGETHER AS A COLLECTION OF SIDE-BY-SIDE INDIVIDUAL TOOLS. TOOLPACK SEEKS TO MERGE THESE CAPABILITIES INTO A SYSTEM WHICH IS SMOOTHLY INTEGRATED BOTH INTERNALLY AND FROM A USER'S EXTERNAL POINT OF VIEW. THE INTERNAL INTEGRATION APPROACH INVOLVES THE DECOMPOSITION OF ALL TOOLS INTO A MORE OR LESS STANDARD SET OF MODULAR "TOOL FRAGMENTS". THE EXTERNAL INTEGRATION APPROACH INVOLVES THE CREATION OF A COMMAND LANGUAGE AND A SET OF CONCEPTUAL ENTITIES WHICH IS CLOSE TO THE CONCEPTUAL SET USED BY MATHEMATICAL SOFTWARE WRITERS.
REFEPENCES: [OSTE81], LEON J. OSTERWEIL, "TOOLPACK - AN INTEGRATED COLLECTION OF TOOLS FOP MATHEMATICAL SOFTWARE", NSIA SOFTWARE CONFERENCE, ALEXANDRIA, VA., 811014
DEVELOPER: JET PROPULSION LABORATORY, ARGONNE NATIONAL LABORATORIES, BELL TELEPHONE LABORATORIES, INTERNATIONAL MATHEMATICAL AND STATISTICAL LIBRARIES, INC., NUMERICAL ALGORITHMS GROUP, LTD., PURDUE UNIVERSITY, UNIVERSITY OF CALIFORNIA AT SANTA BARBARA, UNIVERSITY OF COLORADO
CONTACT: WAYNE COWELL, ARGONNE NATIONAL LAB., APPL MATH DIV, 9700 SO. CASS AVE., BLDG 221, ARGONNE, IL, 60439, USA, 312-972-7164
INFORMATION SOURCE: TECHNICAL LITERATURE

ACRONYM: TOOLS DATABASE, TITLE: NBS SOFTWARE DEVELOPMENT TOOLS DATABASE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, MANAGEMENT PLANNING, CONTROL, COMMANDS INPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 801000
IMPLEMENTATION LANGUAGE: PASCAL R
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): DECSYSTEM-10/20
OS (OTHER SOFTWARE): TOPS-10/20
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
TOOL SUMMARY: THE NBS SOFTWARE TOOLS DATABASE IS A COMPILATION OF DATA ON THE AVAILABILITY OF OVER 300 SOFTWARE DEVELOPMENT AND TESTING TOOLS. THE DATA THAT HAS BEEN COMPILED HAS BEEN PLACED INTO A RELATIONAL DATABASE USING PASCAL/R, A LANGUAGE THAT EXTENDS PASCAL BY A DATA RELATION. THE DATABASE ALLOWS FOR INFORMATION RETRIEVAL ON TOOL FEATURES, LANGUAGES, DEVELOPERS, DOCUMENTATION, HARDWARE AND SOFTWARE REQUIREMENTS, AVAILABILITY, PUBLICATIONS, AND CONTACTS. THE INFORMATION IN A DATABASE OF TOOLS CAN BE USED BY MANAGEMENT TO DEVELOP A SOFTWARE ENGINEERING METHODOLOGY. IT HAS BEEN CONCLUDED IN RECENT REPORTS THAT MODERN SOFTWARE TOOLS CAN OFFER THE SOFTWARE ENGINEERING COMMUNITY THE FOLLOWING: (A) BETTER MANAGEMENT

CONTROL OF COMPUTER SOFTWARE DEVELOPMENT, OPERATION, MAINTENANCE, AND CONVERSION. (B) LOWER COSTS FOR COMPUTER SOFTWARE DEVELOPMENT, OPERATION, MAINTENANCE, AND CONVERSION.
REFERENCES: [HOUG80], HOUGHTON AND OAKLEY, "NBS SOFTWARE TOOLS DATABASE", NBSIR 80-2159, 801100
DEVELOPER: NATIONAL BUREAU OF STANDARDS
CONTACT: RAYMOND C. HOUGHTON, NATIONAL BUREAU OF STANDARDS, TECH BLDG, A265, WASHINGTON, DC, 20234, USA, 301-921-3485
INFORMATION SOURCE: TOOL FAIR

ACRONYM: TPT, TITLE: TESTING PROGRAM TESTING
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, TABLES, LISTINGS, STATIC ANALYSIS, DATA FLOW ANALYSIS, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING,
STAGE OF DEVELOPMENT: DESIGN, DATE (YYMMDD): 840000
IMPLEMENTATION LANGUAGE: FORTRAN, PL/1
COMPUTER (OTHER HARDWARE): IBM 360/370, EC
TOOL SUMMARY: TPT CONSISTS OF THREE SUBSYSTEMS: (1) STATIC ANALYSIS - DETECTION OF ANOMALIES IN PROGRAMMING SYSTEM, USE OF ITERATIVE DATA FLOW ALGORITHMS, WILL ATTEMPT EXTENSIVE USE OF FINITE AUTOMATA DEFINED SEMANTICS; (2) DYNAMIC ANALYSIS - STATEMENT COUNTERS, TRACING OF EXECUTION HISTORY FOR CHOSEN PARTS OF PROGRAM, STATISTICAL MEASUREMENT OF TESTS, ETC.; (3) TEST CASE GENERATION - COMPLETE SETS OF TESTS FOR RESTRICTED LANGUAGES. IN THE FOCUS OF INTEREST IS THE ESTIMATION OF THE FEASIBILITY OF SOME TEST CASE GENERATION (THEORETICAL) ATTITUDES.
DOCUMENTATION: DESIGN SPECIFICATION, "UVT UJEP"
REFERENCES: [HORE79], J. HOREJS, "FINITE SEMANTICS: A TECHNIQUE FOR PROGRAM TESTING", PROC OF 4TH INT CONF ON SOFT ENG, 790900
[MORA78], A. MORAVEC, "THE BASE OF CONTROL FLOW-GRAPH", SCRIPTA FAC., UNIV J. E. PURKYNE, BRNO, 780000
[KRET79], M. KRETINSKY, "ON DETECTION OF DATA FLOW ANOMALIES", PROC SOFSEM 79 CONF, CZECHOSLOVAKIA, 790000
DEVELOPER: UNIVERSITY J.E. PURKYNE
CONTACT: JIRI HOREJS, UNIVERSITY J.E. PURKYNE, COMPUTING SCIENCE DEPARTMENT, BRNO, CZECHOSLOVAKIA,
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: TRAILBLAZER, TITLE: TRAILBLAZER SOFTWARE ANALYSIS SYSTEM
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, COBOL, PL/1, ANS COBOL, ANSI FORTRAN, TRANSFORMATION, INSTRUMENTATION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, COBOL, PL/1, USER OUTPUT, TABLES, LISTINGS, STATIC ANALYSIS, COMPARISON, MANAGEMENT, TEST DATA MANAGEMENT, DYNAMIC ANALYSIS, COVERAGE ANALYSIS, TRACING, PATH FLOW TRACING,

STAGE OF DEVELOPMENT: IMPLEMENTED, DATE (YYMMDD): 790900
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE AVAILABLE THROUGH TASC
TOOL SUPPORTED: YES, TOOL SUPPORT: TASC
TOOL SUMMARY: TRAILBLAZER IS A FAMILY OF TOOLS FOR IMPROVING THE QUALITY OF SOFTWARE AND REDUCING THE COST OF SOFTWARE DEVELOPMENT AND MAINTENANCE. TOOLS WITHIN THE TRAILBLAZER FAMILY OPERATE BY ANALYZING THE STRUCTURE OF SOURCE PROGRAMS AND AUTOMATICALLY MODIFYING THE SOURCE TO REPORT ON INFORMATION ABOUT OPERATING BEHAVIOR OF THE PROGRAMS. TRAILBLAZER TOOLS ARE USEFUL TO SOFTWARE DEVELOPERS, SOFTWARE DEVELOPMENT MANAGERS, QUALITY ASSURANCE SPECIALISTS, EDP AUDITORS AND SECURITY MANAGERS. TRAILBLAZER TESTING ANALYSIS PROVIDES SUMMARY AND DETAILED PICTURES OF HOW THOROUGHLY A SET OF TESTS HAS EXERCISED SOFTWARE. THE DETAILED INFORMATION CAN BE USED TO INCREASE TESTING COVERAGE BY CREATING TESTS THAT EXECUTE UNEXECUTED STEPS, OR, TO BUILD A COMPREHENSIVE 'REGRESSION TEST LIBRARY' THAT CAN BE SELECTIVELY EXECUTED WHENEVER CHANGES ARE MADE TO THE SYSTEM. THE TRAILBLAZER CHANGE ANALYZER REPORTS ON DIFFERENCES BETWEEN AN OLD AND NEW VERSION OF A SYSTEM'S SOURCE CODE.
DOCUMENTATION: USER'S MANUAL, PRIMER, REFERENCE MANUAL
REFERENCES: [HOLT81], M. A. HOLTHOUSE, C. W. LYBROOK, "IMPROVING SOFTWARE TESTING IN LARGE DATA PROCESSING ORGANIZATIONS", PROCEEDINGS OF NCC, 810212
[HOLT79], M. A. HOLTHOUSE, M. J. HATCH, "EXPERIENCE WITH AUTOMATED TESTING ANALYSIS", COMPUTER, 790800
[HOLT78], M. A. HOLTHOUSE, M. R. PAIGE, "SOFTWARE TESTING: AN EVOLVING TECHNOLOGY", 1978 ANNUAL SPRING RELIABILITY SEMINAR, 780427
DEVELOPER: TASC
CONTACT: MARK A. HOLTHOUSE, TASC, ONE JACOB WAY, READING, MA, 01867, USA, 617-944-6850
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: TRANSFOR, TITLE: TRANSLATOR FOR STRUCTURED FORTRAN
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, STRUCTURED FORTRAN, VHLL INPUT, STRUCTURED LANGUAGE, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL SUMMARY: TRANSFOR (TRANSLATOR FOR STRUCTURED FORTRAN) IS A PRE-PROCESSOR THAT EXTENDS THE FORTRAN LANGUAGE FOR STRUCTURED PROGRAMMING. IT ALLOWS THE PROGRAMMER TO WRITE EFFICIENT, STRUCTURED CODE FREE OF GO TO STATEMENTS. THE USE OF STATEMENT NUMBERS IS ELIMINATED AND THE NESTING OF CONTROL STRUCTURES ENFORCED. TRANSFOR AND FORTRAN

STATEMENTS ARE COMPLETELY COMPATIBLE AND CAN BE FREELY INTERMIXED. THE RESULTANT SOFTWARE IS MORE READABLE BECAUSE OF THE AUTOMATIC INDENTATION OF CONTROL STATEMENTS BY WHICH NESTING IS DEPICTED. SNEAK PATHS AND UNANTICIPATED EXECUTION SEQUENCES ARE RARE, SINCE THE PROGRAMMER IS ABLE TO SEE PRIMARILY STRAIGHTFORWARD LOGIC.
DOCUMENTATION: USER'S MANUAL, INSTALLATION INSTRUCTION
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: BCS, INC.
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TRMS, TITLE: TECHNICAL REQUIREMENTS MANAGEMENT SYSTEM
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, TABLES, STATIC ANALYSIS, MANAGEMENT, PROJECT MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: COBOL
TOOL SIZE: CORE: 56K
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
TOOL SUMMARY: TRMS IS DESIGNED TO MONITOR CRITICAL MILESTONES AND TO PROVIDE DOCUMENTATION AT THE PROJECT LEVEL. IT ALLOWS FOR TOP-DOWN EVENT/ACTIVITY IDENTIFICATION AND SCHEDULING, MAINTAINS DATA ON ALL CRITICAL DOCUMENTS, MONITORS INCORPORATION OF DESIGN CHANGES, AND PROVIDES AN "AS DESIGNED" PARTS LIST AS WELL AS A COMPARISON OF THE "AS DESIGNED - AS BUILT" PARTS LIST. THE SYSTEM IS COMPOSED OF SIX MODULES: REQUIREMENTS IDENTIFICATION, PLANNING AND SCHEDULING, DOCUMENT STATUS, PARTS DATA, CONFIGURATION VERIFICATION, AND AS DESIGNED - AS BUILT. EACH USES A SINGLE DATA BASE AND HAS THE CAPABILITY OF STAND-ALONE OPERATION. THE MODULES ARE DESIGNED TO OPERATE IN AN ON-LINE MODE USING VIDEO DISPLAY EQUIPMENT, ARE CONFIGURED TO HAVE BATCH REPORTING AND BATCH BACK-UP CAPABILITIES, AND ARE CONSTRUCTED TO MEET THE APPLICABLE MILITARY SPECIFICATIONS REQUIRED OF DOD CONTRACTORS.
DOCUMENTATION: USER'S MANUAL, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: MARTIN MARIETTA DATA SYSTEMS
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: TRWPLT, TITLE: PROGRAM TRWPLT
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, DATA INPUT, USER OUTPUT, GRAPHICS, STATIC ANALYSIS, MANAGEMENT, DOCUMENTATION MANAGEMENT,

TRWPLT

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN V
COMPUTER (OTHER HARDWARE): UNIVAC 11XX
TOOL SUMMARY: TRWPLT IS A GENERAL PLOT PROGRAM -- EASY TO USE, ABLE TO RAPIDLY PLOT LARGE AMOUNTS OF DATA, ABLE TO PRODUCE HIGH QUALITY VERY READABLE CALCOMP OR MACHINE PLOTS. TRWPLT IS A REAL TIMESAVER. IT IS A VALUABLE AND POWERFUL TOOL FOR PROJECTS WHICH MUST EXHIBIT AND ANALYZE LARGE AMOUNTS OF DATA AND PREPARE PLOT-TYPE DISPLAYS FOR INCLUSION IN DOCUMENTATION.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW HOUSTON FACILITY
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: TSA/PPE, TITLE: TOTAL SYSTEM ANALYZER/PROBLEM PROGRAM EVALUATOR
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, USER OUTPUT, DIAGNOSTICS, LISTINGS, DYNAMIC ANALYSIS, TUNING, RESOURCE UTILIZATION,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, ASSEMBLY
COMPUTER (OTHER HARDWARE): IBM 360/370
OS (OTHER SOFTWARE): OS, OS/VS, OS/MVS
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): AVAILABLE FOR LEASE
TOOL SUMMARY: TSA/PPE(TOTAL SYSTEM ANALYZER/PROBLEM PROGRAM EVALUATOR) PERFORMS SYSTEM ANALYSIS, WORKLOAD ANALYSIS, AND PROGRAM ANALYSIS TO IDENTIFY AREAS OF HIGH CPU UTILIZATION FOR SYSTEM AND PROGRAM MODULES. THE PACKAGE CONSISTS OF FIVE PROGRAM: THE TSA EXTRACTOR, THE TSA ANALYZER, THE TSA WORKLOAD ANALYZER, THE PPE EXTRACTOR, AND THE PPE ANALYZER. THE TSA EXTRACTOR SAMPLES THE ACTIVITY OF SYSTEM AND PROGRAM MODULES SIMULTANEOUSLY. THE TSA ANALYZER TABULATES THE COLLECTED DATA INTO A MODULE USAGE SUMMARY REPORT LISTING ALL THE MODULES MEASURED AND THEIR CORRESPONDING CPU USAGE AND ACTIVITY. THE PPE ANALYZER UTILIZES THE DATA COLLECTED BY THE EXTRACTOR AND PRODUCES A SET OF INSTRUCTION LOCATIONS HISTOGRAMS FOR ANY PROGRAM OR SYSTEM MODULES SPECIFIED BY THE USER.
DEVELOPER: BOOLE AND BABBAGE
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: UCA, TITLE: UNITS CONSISTENCY ANALYSIS
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, LISTINGS, STATIC ANALYSIS, UNITS ANALYSIS, SCANNING,

UCA

STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
COMPUTER (OTHER HARDWARE): CDC 6X00/7X00
TOOL SUMMARY: THE UNITS CONSISTENCY ANALYSIS PROGRAM IS A QUALITY ASSURANCE TOOL WHICH SCANS A FORTRAN PROGRAM AND ITS ASSOCIATED DATA BASE (FOR ACCESS TO VARIABLE UNITS DEFINITION) TO DETERMINE IF THE UNITS OF THE VARIABLES USED IN THE PROGRAM ARE CONSISTENT WITHIN THE SOURCE STATEMENTS. THE PROGRAM SYMBOLICALLY INTERPRETS THE EQUATIONS REFERENCING THE VARIABLES TO ASSURE THAT THE UNITS ARE CORRECT AND CONSISTENT WITHIN THE EQUATIONS. FOR EXAMPLE, IN THE C = A * B IF VARIABLES A AND B WERE DEFINED TO BE IN UNITS OF FEET, VARIABLE C OUGHT TO BE DEFINED IN UNITS OF SQUARE FEET, OR A DIAGNOSTIC WOULD BE PRINTED. OPTIONAL INPUTS ALLOW THE USER TO OVERRIDE THE THE UNITS SPECIFICATION IN THE DATA BASE, AND ADD UNITS DEFINITIONS FOR VARIABLES NOT FOUND IN THE DATA BASE.
DOCUMENTATION: USER'S MANUAL, REQUIREMENTS MANUAL, DESIGN MANUALS
REFERENCES: [ASDS79], APPLIED SYSTEMS DESIGN SECTION, TRW DEFENSE AND SPACE SYSTEMS GROUP, "SOFTWARE TOOLS: CATALOGUE AND RECOMMENDATIONS", TRW AUTOMATED SOFTWARE TOOLS SERIES, 790100
DEVELOPER: TRW, SEID SOFTWARE PRODUCT ASSURANCE
CONTACT: FRANK INGRASSIA, TRW, SEID SOFTWARE PRODUCT ASSURANCE, ONE SPACE PARK, REDONDO BEACH, CA, 90278, USA, 213-536-3140
INFORMATION SOURCE: TRW SOFTWARE TOOLS CATALOG

ACRONYM: UCSD P-SYSTEM, TITLE: A PORTABLE SOFTWARE ENVIRONMENT FOR SMALL COMPUTERS
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, FORTRAN, PASCAL, FORTRAN 77, TRANSFORMATION, TRANSLATION, COMPILATION, EDITING, USER OUTPUT, LISTINGS,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL UCSD
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): LICENSE
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTECH MICROSYSTEMS
TOOL SUMMARY: THE UCSD P-SYSTEM IS A STAND-ALONE PROGRAM DEVELOPMENT AND EXECUTION ENVIRONMENT FOR SMALL COMPUTERS. ITS FACILITIES INCLUDE TEXT EDITORS AND FILE MANAGEMENT UTILITIES, AS WELL AS COMPILERS (UCSD PASCAL, FORTRAN-77 AND BASIC), MACRO CROSS-ASSEMBLERS AND A LINKAGE EDITOR. THE P-SYSTEM PROVIDES A PORTABLE SOFTWARE ENVIRONMENT INDEPENDENT FROM THE HOST PROCESSOR AND ITS PERIPHERAL DEVICES. THE FOUNDATION FOR THIS PORTABILITY IS THE UCSD P-MACHINE. IT IS A SIMPLE IDEALIZED STACK COMPUTER WHICH CAN BE IMPLEMENTED BY DIRECT HARDWARE SUPPORT OR BY AN INTERPRETER EXECUTING IN THE MACHINE LANGUAGE OF THE HOST COMPUTER. ALL SYSTEM SOFTWARE IS WRITTEN IN UCSD PASCAL, COMPILED TO P-CODE AND THEN EXECUTED BY THE P-MACHINE.

DOCUMENTATION: FORTRAN USER REFERENCE MANUAL, BASIC USER REFERENCE MANUAL, BEGINNERS GUIDE
DEVELOPER: SOFTECH
CONTACT: SOFTECH MICROSYSTEMS, 9494 BLACK MOUNTAIN ROAD, SAN DIEGO, CA, 92126, USA, 714-578-6105
INFORMATION SOURCE: TOOL FAIR

ACRONYM: UF, TITLE: UNIVERSAL FLOWCHARTER
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, TRANSFORMATION, FORMATTING, USER OUTPUT, GRAPHICS, FLOW CHARTS, STATIC ANALYSIS, SCANNING,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: PASCAL
TOOL SIZE: CORE: 100K
COMPUTER (OTHER HARDWARE): IBM 360/370, CDC 6X00/7X00
TOOL AVAILABLE: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR SALE
TOOL SUMMARY: THE UNIVERSAL FLOWCHARTER PRODUCES STRUCTURED DESIGN DIAGRAMS AND CONCORDANCES FOR SOURCE PROGRAMS. BY UNIVERSAL, WE MEAN PROGRAMMING LANGUAGE. A STRUCTURED DESIGN DIAGRAM AS A FLOW CHART IN A CONCISE, TREE-LIKE FORMAT APPROPRIATE FOR REPRESENTING FLOW OF CONTROL IN A STRUCTURED PROGRAM. THE DIAGRAMS ARE NEATLY INDENTED, AND HAVE NO LINES THAT CROSS OTHERS, OR LOOP BACK UP THE PAGE AS TRADITIONAL FLOW CHARTS DO. IN ORDER TO USE THE FLOWCHARTS ON PROGRAMS WITHIN A PARTICULAR LANGUAGE, ONE MUST FIRST SPECIFY THE GRAMMAR OF THAT LANGUAGE. PREPARING THE GRAMMAR IS NON-TRIVIAL, BUT IT IS DONE ONLY ONCE; FROM THEN ON, ANY PROGRAM WRITTEN IN THAT LANGUAGE CAN BE FLOWCHARTED, WITHOUT ANY ADDITIONS TO THE SOURCE PROGRAM. PRODUCING A FLOWCHART IS AS EASY AS ADDING A CARD TO A COMPILATION JOB. THE UNIVERSAL FLOWCHARTER WAS DEVELOPED AS PART OF THE MUST OF SUPPORT TOOLS, AND IS INSTALLED AT LANGLEY RESEARCH CENTER.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER, DEVELOPMENT SPECIFICATION
REFERENCES: [HARE00], HAREL, D AND PARLEIEWICZ, R., "A UNIVERSAL FLOWCHARTER", TECHNICAL NO. 16, 900
DEVELOPER: HIGHER ORDER SOFTWARE, INC.
CONTACT: PETER NORVING, HIGHER ORDER SOFTWARE, INC., 806 MASS AVE., CAMBRIDGE, MA, 02139, USA, 617-661-8900
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: VIRTUAL OS, TITLE: SOFTWARE TOOLS VIRTUAL OPERATING SYSTEM
CLASSIFICATION: SOFTWARE SUPPORT SYSTEM/PROGRAMMING ENVIRONMENT
FEATURES: SUBJECT, TEXT INPUT, CODE INPUT, RATFOR, TRANSFORMATION, TRANSLATION, STRUCTURE PREPROCESSING, EDITING, FORMATTING, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN, USER OUTPUT, DIAGNOSTICS, USER-ORIENTED TEXT, LISTINGS, STATIC ANALYSIS, COMPARISON, CROSS REFERENCE,

MANAGEMENT, FILES MANAGEMENT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN, PASCAL, RATFOR
TOOL PORTABLE: YES, TOOL SIZE: 50000 LINES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: YES
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): SOME SPECIFIC SYSTEMS INTERFACES ARE BEING MARKETED
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTWARE TOOLS USERS GROUP
TOOL SUMMARY: ONE OF THE MANY PROBLEMS WHICH PROGRAMMERS (AND END USERS) ENCOUNTER IN THEIR EVERYDAY USE OF COMPUTERS IS THE LACK OF COMMON UTILITIES AS THEY MOVE FROM SYSTEM TO SYSTEM. IN ADDITION, MOVING CODE FROM MACHINE TO MACHINE IS COSTLY AND ERROR-PRONE. THESE PROBLEMS CAN BE REDUCED THROUGH THE USE OF A VIRTUAL OPERATING SYSTEM THAT DISENTANGLES COMPUTING ENVIRONMENTS FROM THEIR UNDERLYING OPERATING SYSTEMS. THE SOFTWARE TOOLS PROJECT IS AN EXPERIMENT TO ACHIEVE INTER-SYSTEM UNIFORMITY AT ALL LEVELS OF USER INTERFACE.
DOCUMENTATION: THE SOFTWARE TOOLS PROGRAMMERS MANUAL
REFERENCES: [AKIN78], AKIN, T. ALLEN, P. FLINN, AND D. FORSYTH, JR., "SOFTWARE TOOLS SUBSYSTEM REFERENCE MANUAL", TECHNICAL REPORT, SCHOOL OF INFORMATION AND COMP. SCIENCE, 780400
[HALL80], HALL, DENNIS, DEBORAH K. SCHERRER, JOSEPH S. SVENTEK, "A VIRTUAL OPERATING SYSTEM", CACM, 800900
DEVELOPER: LAWRENCE BERKELEY LABORATORY
CONTACT: MICHAEL BOURKE, SRI INTERNATIONAL, 333 RAVENSWOOD AVE., PN311, MENLO PARK, CA, 94025, USA, 415-326-6200
INFORMATION SOURCE: TOOL FAIR

ACRONYM: X TO Y TRANS PK, TITLE: X TO Y TRANSPORTATION PACKAGE
CLASSIFICATION: SOFTWARE MANAGEMENT, CONTROL, AND MAINTENANCE
FEATURES: SUBJECT, CODE INPUT, FORTRAN, TRANSFORMATION, TRANSLATION, CONVERSION, MACHINE OUTPUT, SOURCE CODE OUTPUT, FORTRAN,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: FORTRAN
TOOL PORTABLE: YES
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED COMMERCIALLY
TOOL SUPPORTED: YES, TOOL SUPPORT: SOFTOOL CORPORATION
TOOL SUMMARY: SOFTOOL OFFERS AN AGGREGATE OF TOOLS THAT ALLOW THE DEVELOPMENT, TESTING AND FORMATTING OF FORTRAN PROGRAMS ON ONE COMPUTER INTENDED FOR COMPILATION ON ANOTHER COMPUTER. THE DIALECTS OF THE FORTRAN LANGUAGE IMPLEMENTED BY TWO DIFFERENT MANUFACTURES DO NOT OVERLAP, THEY SIMPLY INTERSECT. THE GENERATION OF FORTRAN PROGRAMS THAT ARE ACCEPTABLE TO BOTH COMPILERS IS INSURED ONLY IF ALL CODE GENERATED IS GUARANTEED TO FALL WITHIN THAT SUBSET OF THE FORTRAN LANGUAGE IMPLEMENTED BY BOTH MANUFACTURERS.

THIS TASK DEFINES MANUAL IMPLEMENTATION. IT MUST BE PERFORMED AUTOMATICALLY. FURTHER, IN ORDER TO MOVE PROGRAMS FROM ONE COMPUTER TO ANOTHER IT IS NECESSARY TO REBLOCK, COMPRESS AND TRANSLATE PROGRAMS, AS WELL AS TO REPLACE JOB CONTROL LANGUAGE COMMANDS. SOFTOOL OFFERS A COMPLETE FORTRAN TRANSPORTATION PACKAGE. TRANSPORTATION BETWEEN IBM, DEC, DG AND SYSTEMS COMPUTERS IS SUPPORTED.
DEVELOPER: SOFTOOL CORPORATION
CONTACT: CAROL BADDORF, SOFTOOL CORPORATION, 340 SOUTH KELLOGG AVE., GOLETA, CA, 93117, USA, 805-964-0560
INFORMATION SOURCE: COMPLETED SUBMISSION TO NBS

ACRONYM: XAS8, TITLE: STRUCTURED MACROASSEMBLER FOR 8080
CLASSIFICATION: REQUIREMENTS/DESIGN SPECIFICATION AND ANALYSIS
FEATURES: SUBJECT, CODE INPUT, ASSEMBLY LANGUAGE, TRANSFORMATION, TRANSLATION, MACRO EXPANSION, MACHINE OUTPUT, OBJECT CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: C
COMPUTER (OTHER HARDWARE): DEC PDP-11, INTEL 8080/8085
OS (OTHER SOFTWARE): UNIX
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): FOR LEASE
TOOL SUMMARY: THIS MACRO ASSEMBLER RUNS ON DEC PDP-11'S UNDER UNIX AND PRODUCES RELOCATABLE CODE FOR THE INTEL 8080 OR 8085. THE SOURCE LANGUAGE FOR THE ASSEMBLER IS A COMPILER-LIKE LANGUAGE HAVING ASSEMBLY-TIME AS WELL AS RUN-TIME IF-THEN-ELSE AND LOOP CONSTRUCTS. THERE ARE A FULL PARAMETERIZED MACRO SUBSTITUTION AND INCLUDE FILE CAPABILITIES. THERE IS A COMPANION LINK EDITOR/LOADER FOR PRODUCING CORE IMAGE FILES. REHOSTING FOR OTHER PDP-11 OPERATING SYSTEMS IS POSSIBLE.
DOCUMENTATION: USER'S MANUAL, TECHNICAL PAPER, MAINTENANCE MANUAL, DEVELOPMENT SPECIFICATION, TEST PLAN
DEVELOPER: SOFTECH, INC.
CONTACT: VIC VOYDOCK, SOFTECH, INC., 460 TOTTEN POND ROAD, WALTHAM, MA, 02154, USA, 617-890-6900
INFORMATION SOURCE: AIAA SURVEY OF SOFT DEV TOOLS

ACRONYM: XPEDITER, TITLE: THE PROGRAMMER PRODUCTIVITY TOOL FOR THE 80'S
CLASSIFICATION: SOURCE PROGRAM ANALYSIS AND TESTING
FEATURES: SUBJECT, CODE INPUT, COBOL, USER OUTPUT, TABLES, LISTINGS, DYNAMIC ANALYSIS, TRACING, REGRESSION TESTING,
STAGE OF DEVELOPMENT: IMPLEMENTED
TOOL PORTABLE: NO
COMPUTER (OTHER HARDWARE): IBM 360/370
TOOL AVAILABLE: YES, PUBLIC DOMAIN: NO
RESTRICTIONS (COPYRIGHTS, LICENSES, ETC.): MARKETED PRODUCT
TOOL SUPPORTED: YES, TOOL SUPPORT: APPLICATION DEVELOPMENT SYSTEMS, INC.

TOOL SUMMARY: XPEDITER USES SEVERAL INNOVATIVE FACILITIES AND TECHNIQUES TO INCREASE PROGRAMMER PRODUCTIVITY IN TESTING AND DEBUGGING. TEST ENVIRONMENT PREPARATION, TEST EXECUTION AND CONTROL, AS WELL AS PROBLEM ANALYSIS ISOLATION ARE ALL WITHIN ITS SCOPE OF FUNCTION. NO CHANGE IS EVER MADE TO YOUR SOURCE OR OBJECT CODE FOR EITHER BATCH OR INTERACTIVE USE.
DOCUMENTATION: APPLICATION DESCRIPTION MANUAL (48)
DEVELOPER: APPLICATION DEVELOPMENT SYSTEMS, INC.
CONTACT: APPLICATION DEVELOPMENT SYSTEMS, INC, 1530 MERIDIAN AVENUE, SAN JOSE, CA, 95125, USA, 408-264-2272
INFORMATION SOURCE: PRODUCT DESCRIPTION

ACRONYM: YACC, TITLE: YET ANOTHER COMPILER COMPILER
CLASSIFICATION: PROGRAM CONSTRUCTION AND GENERATION
FEATURES: SUBJECT, CODE INPUT, C, VHLL INPUT, DESCRIPTION LANGUAGE, TRANSFORMATION, SYNTHESIS, MACHINE OUTPUT, SOURCE CODE OUTPUT,
STAGE OF DEVELOPMENT: IMPLEMENTED
IMPLEMENTATION LANGUAGE: C
COMPUTER (OTHER HARDWARE): DEC PDP-11
OS (OTHER SOFTWARE): UNIX
TOOL AVAILABLE: YES
TOOL SUPPORTED: NO
TOOL SUMMARY: GIVEN A LANGUAGE SYNTAX (DEFINED IN BNF) AND SEMANTICS (DEFINED AS SUBROUTINES WRITTEN IN THE C PROGRAMMING LANGUAGE), YACC PRODUCES CODE THAT WILL TRANSLATE PROGRAMS WRITTEN IN THE LANGUAGE. THE OUTPUT OF THE COMPILER PRODUCED BY YACC TRANSLATES INTO A LANGUAGE DEFINED BY THE SEMANTIC SUBROUTINES SUPPLIED TO YACC AS PART OF THE LANGUAGE DEFINITION.
DOCUMENTATION: USER'S MANUAL
REFERENCES: [REIF81], D. J. REIFER AND H. A. MONTGOMERY, "SEATECS SOFTWARE TOOLS SURVEY", RCI-TR-008, REIFER CONSULTANTS, INC., 810330
[JOHN78], S. JOHNSON, M.E. LEALS, "UNIX TIME-SHARING SYSTEM LANGUAGE DEVELOPMENT TOOL", BELL SYSTEM TECH. JOURNAL, VOL. 57, NO. 6, PART 2, 780700
DEVELOPER: BELL LABORATORIES, MURRAY HILL, N.J., 07974
INFORMATION SOURCE: NOSC SEATECS TOOLS SURVEY

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-360-997/2043

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☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

11. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)*

As a part of the program to provide information to Federal agencies on the availability, capabilities, limitations, and applications of software development tools, a database of information about existing tools was collected over a 3-year period. The purpose of this report is to present an analysis of the information contained in the database. Various categorizations of the tools are presented in classes listed by their characteristic features. The lists incorporate percentage summaries that are based on the total number of tools for which information is stored in the database. Trends found in the lists are analyzed and discussed. Abstracts of each tool are presented in an appendix.

12. KEY WORDS *(Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)*

programming aids; software automation; software development; software engineering; software testing; software tools

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